













THE  
CALCUTTA JOURNAL  
OF  
MEDICINE

A MONTHLY RECORD OF THE MEDICAL AND AUXILIARY SCIENCES.

तदेव युक्तं भैषज्यं यत्प्रारोग्याय कल्पते ।

सचैव भिषजां श्रेष्ठो रोगेभ्यो यः प्रमोचयेत् ॥

चरकसंहिता ।

That alone is the right medicine which can remove disease :

He alone is the true physician who can restore health.

*Charaka Sanhita.*

VOL. XXIX.

Calcutta:

PRINTED AND PUBLISHED BY P. SIRCAR, ANGLO-SANSKRIT PRESS,  
51, SANKARITOLA.

1911.



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# THE CALCUTTA JOURNAL OF MEDICINE.

Vol. xxix.]

January 1910.

[No. 1.]

## HINTS ON TAKING THE CASE.

BY THE SENIOR EDITOR, B. H. REVIEW.

It has always seemed to me a pity that we have no special case-taking card wherewith to assist beginners in homœopathic practice to "take the case," which is and will ever be the most difficult part of our work; and if this is true of the veteran, how much more so is it true of the tyro—did he only know it? Clerks and dressers in the wards of our Allopathic hospitals are always furnished with a case-taking card, and up to a certain point these are useful in the wards of Homœopathic hospitals also, as well as in general everyday practice. So long as we are content to stop short at the *diagnosis of the disease* and to prescribe on *that* basis, then there is very little to complain about; but that is a very poor sort of Homœopathy. It is truly a pitiable sight to see any one trying to take the case, from the Homœopathic standpoint, under the guidance of a case-taking card, such as that used in Allopathic hospitals. The card for Homœopathic practitioners should deal more especially with the lines of investigation necessary for the *diagnosis of the remedy*, and it cannot be insisted upon too strongly that the symptoms sufficient to diagnose the *disease* are most insufficient, indeed almost useless, for the purpose of diagnosing the *remedy*. Indeed, we may say that the greater the value of a symptom for purposes of diagnosis

Vol. xxix. No. 1. 1910. Date, 29.1.10

the less its value for the selection of the remedy. As a beginner in Homœopathy that was *the* fact that astonished me most of all. That all the symptoms of the various diseases, and the various facts of morbid anatomy, that we had, as students, crammed so diligently into our empty heads, should take such a low rank in the diagnosis of the Homœopathic remedy, was, indeed, startling. The symptoms sufficient for the diagnosis of the disease according to the "Nomenclature of Diseases" drawn up by the Royal College of Physicians of London ("subject to decennial revision") do not go far enough, and are not minute enough for our purpose. To restore health to the sick we must *individualize*. No guessing can be tolerated. To place the case properly in the "Nomenclature of Diseases," all that is necessary is to *generalize*—though even then I do not believe that 50 per cent. of cases of disease are properly so placed in ordinary death certificates. No doubt there are general symptomatic resemblances in all patients affected by any one given "disease." But nevertheless it is equally true that in each case there are minute symptomatic differences which distinguish it from every other case, and it is these differences that are all-important for the purpose of individualization. We could either have a separate card, or a separate section might be added to the ordinary case-taking cards used in Allopathic hospitals. The card would thus have two great sections: (a) material necessary for the diagnosis of the disease, and (b) material necessary for the diagnosis of the Homœopathic remedy, remembering that *any* disease may require *any* remedy.

We regard the following sections as of the greatest importance in "taking the case," for the purpose of diagnosing the proper Homœopathic remedy.

#### HISTORY BY THE PATIENT.

(1) Let the patient tell his own story, without interrupting him, if possible; in many cases this is not possible, as patients are so apt to wander off to other matters. If the patient is unable to do this, then attendants or friends must tell their story.

(2) Write each statement down on a separate line or paragraph, and in the patient's own words.

(3) Always regard the symptoms, as detailed by the patient, as *realities*, until you can *prove* that they are not.

#### DOCTOR'S CROSS-EXAMINATION.

(1) Never put a "leading" question, *i.e.*, never, if possible, ask a question that must be answered by *Yes* or *No*. The questions must never suggest the answer.

(2) Enquire in detail with regard to every individual symptom, or sensation, *e.g.*, a pain.

(a) Its exact situation, making patient put his finger on the spot; if the pain moves or radiates, ascertain the direction and extent of this.

(b) The kind of sensation or pain—what it feels like. Is it a burning or sticking pain, an empty or numb sensation?

(c) The modalities or conditions: everything that aggravates or ameliorates the complaint. These are many; one of the most important is *Time*, *i.e.*, the period in the twenty-four hours when the complaint is better or worse. Our old friend Dr. Skinner used to say that *Time always rules* in matters of amelioration and aggravation. Then as regards *Circumstances*: this includes the effect of *Posture*, *Touch*, *Motion* of all kinds, as ascending, descending; it also includes the effect of *external influences*, wet or dry weather, hot or cold applications, cold or warm air, and so on.

(d) Concomitants, *i.e.*, symptoms, that accompany or go along with the main complaint, in some other part of the body, and which have, apparently, no direct connection with the main complaint or the suffering part. These concomitants may be found in any part of the body, and are of great value. It is best to go rapidly over each *anatomical region*



and each organ of special sense, not forgetting to ask about *sleep and dreams*, and mental states.

(3). If the information wanted is still incomplete, the doctor may then ask specific questions in case any points have been omitted by the patient. In chronic cases this should always be done, paying special attention to the *mucous tracts* ;—

(a) Alimentary canal from mouth to anus and the various functions, as appetite, thirst, taste, desires and aversions, digestion, &c.

(b) Respiratory passages, including eyes and nose.

(c) Genito-urinary tract, including menstrual functions, urine and bladder.

(4) In investigating *chronic diseases*, endeavour to find out whether any specific disorder or hereditary tendency lies at the bottom of the illness.

(a) *Psora* ("scarious diathesis"), as suggested by itching, scaly, skin eruptions.

(b) *Syphilis*, as suggested by history of chancre and bubo, skin eruptions, sore throat, miscarriages, together with the well-known signs of inherited syphilis.

(c) *Sycosis*, as suggested by warts and condylomata.

(d) *Taccinosis*, as suggested by mattery-headed pimples.

(e) *Tubercular*. "The Tubercular miasm is the psoric miasm intensified, or the combination of psora and syphilis" (Allen). In a general way we find that the *brain and its membranes* are most apt to be attacked in childhood; the contents of the *abdomen* in boyhood and girlhood, and the *lungs* in adult life.

In these cases also it is well to find out what previous allopathic treatment the patient has suffered.

(5) The proximate cause. In many cases the patients and their friends are unable or unwilling to help us here, and we must guess it. It may be some mental, moral, or physical defect, domestic discord, sexual errors and their results, drunkenness, grief, unrequited love, jealousy, pecuniary losses, &c.

(6) In a general way the order of the examination is from above downwards, and from within outwards, though in some cases special symptoms, especially the one concerned in the patient's chief complaint, are followed to the end before other organs or parts or functions are examined.

(7) As regards the value of symptoms: "Subjective and moral and intellectual symptoms always take precedence in time and circumstance" (Skinner). In conditions of aggravation and amelioration *time always rules*.

In a symptom-complex, especially in a case of chronic disease, the most recent symptoms and the most recent proximate cause are the points to pay special attention to; since the patient has to begin, just where he stands, to retrace his steps back to health. Hence in a Homœopathic cure the most recent symptoms should disappear first, *i.e.*, the symptoms ought to disappear in the reverse order of their appearance.

"The more striking, singular, uncommon, and peculiar symptoms are the characteristics," and should be specially examined; for it is *more particularly these that very similar ones in the list of symptoms of the selected medicine must correspond to in order to constitute it the similimum*.

Having by means of the Index to the Materia Medica (by some called a "Repertory") found the medicines whose symptoms are *like* those detailed by the patient, then consult the Materia Medica itself to find *the most like*, of which of necessity there can only be *one*.

Our object should be to secure these three: (1) The similimum; (2) the single remedy; (3) the minimum dose. We must never make the *size* of the dose a substitute for a careful selection of the most like medicine. Nevertheless, on the other hand, as "The cowl does not make the monk," so neither does mere dabbling in "high potencies" constitute a Homœopathic physician in any sense of the term.

Avoid these *three mistakes*. Hahnemann says: "There are three mistakes which the physician cannot too carefully avoid."  
(1) To suppose that the doses which I have indicated as the

proper doses in the treatment of diseases, and which long experience and close observation have led me to adopt, are too small; (2) the improper selection of the remedy; (3) not letting the remedy act a sufficient length of time. In the treatment of chronic diseases the too hasty repetition of the dose cannot be too carefully avoided. The whole cure fails if the antipsoric remedies which have been prescribed are not allowed to act uninterruptedly to the end."

We may assume that the medicine which includes *three* of the characteristic symptoms discovered in the examination of a patient, in its pathogenesis, will be sufficient to make a cure very probable. The physicist tells us that objects such as his instruments of precision rest most securely on *three* points of support. Look for these characteristic symptoms: (1) In the sensations of the patient or character of the pain; (2) in the locality or tissues affected; (3) among the conditions of aggravation or amelioration, especially *time*; (4) among the concomitant symptoms.

#### HAHNEMANN'S THREE RULES.

The following practical rules of Hahnemann for the treatment of chronic diseases are condensed from Hering, by the late Dr. H. C. Allen:—

*Rule 1.*—The characteristics of the drug must be similar to the characteristics of the case. "In making this comparison, the more *prominent*, *uncommon*, and *peculiar* features of the case are especially and almost exclusively considered and noted; for these in particular should bear the closest similitude to the symptoms of the desired medicine, if that is to accomplish the cure."

The symptoms of a case and the symptoms of a remedy must not only be alike one by one, but they must also be of the same rank. In the *arrangement of symptoms* after the examination of a case, the value, the importance, the rank of the symptoms must be considered, for in careful comparison of several remedies, having the same similarity, it is this rank

or value which often decides the selection of the curative remedy.

*Rule II.*—This rule of practice is based upon Hahnemann's theory of chronic diseases, viz., "All chronic diseases progress from without inwardly, from the less to the more essential parts of our body; from the periphery to the central organs, and generally from below upwards." Hence in the selection of a remedy one should be chosen which act in the opposite direction—"from within outward, from above downward, from the brain and nerves outward downward to the most outward and lowest of all organs, the skin."

Hahnemann's antipsoric remedies all have this peculiarity as characteristic—the evolution of effects (symptoms) from within outward. Hence all symptoms of the sick having such a direction, from without inwards, and all symptoms of remedies from within outwards—the opposite direction—are always to be considered of the highest rank or value in the choice of the similimum.

*Rule III.*—The symptoms recently developed are the first to yield; older symptoms disappear later, or, as Hering says: "In diseases of long standing, when the symptoms, or groups of symptoms, have befallen the sick in a certain order, succeeding each other, more and more being added from time to time to those already existing, in such cases this order should be reversed during the cure; the last ought to disappear first, and the first last."

The following are the advantages of these rules.—

(1) "When examining a patient, care must be taken to ascertain, as far as possible, the order, according to time, in which the symptoms made their first appearance.

(2) "Arrange the recorded symptoms according to their value or rank, not neglecting any, either objective or subjective, but placing in the foreground and giving prominence to those which were the latest to appear, for to those especially should the remedy be similar.

(3) "If the patient has been drugged, ~~on~~ <sup>his</sup> antidotes, to be most effectual, must be directed especially against *those last given*

(4) "In every chronic case, after the similimum has had time to improve the case and ~~cases~~ to do any further good, a new examination must be made, and in this examination particular attention should be paid to new symptoms; and in the choice of a remedy these new symptoms must be carefully noted as generally they are of leading or high rank.

(5) "If we thus succeed in restoring a chronic case of long standing, the symptoms disappearing in the reverse order of their appearance, the case can be dismissed as cured without any danger of returning; if not we had better tell the patient, even if he be satisfied with a partial cure, that before long he may be sick again."

"Without this third rule, the homœopathic healing art would be a most imperfect one. But this enables the true Homœopath, not only to cure the most obstinate chronic disease—even those usually pronounced incurable—but also when discharging the case to make a certain prognosis whether the patient will remain cured or whether the disease, like a half-paid creditor, will return the first opportunity. This is prevision applied to the cure of chronic diseases."

Dr. C. W. Eaton says: "Not from any troop of new remedies, not from a new law of cure, not from any revolutionizing discoveries, but from the vantage ground of a better understood and closer applied homœopathy, are we to conquer the incurable. . . . There are many methods, but only one law; and chance, accident, or exception are unknown to natural law, hence the indicated remedy must bear the brunt of the battle."

On all these points consult the *Organon of Medicine*, especially paragraphs 83 to 94 inclusive, and also paragraph 153 (Dudgeon's translation, published by the Hahnemann Publishing Society, 1893).

As regards the administration of medicines: When a patient, after having taken the medicine once or oftener, begins to feel

better, however little, the medicine should be at once discontinued, lest the progress of the cure should be retarded or otherwise interfered with. Should the medicine cause aggravation of the existing symptoms the same rule applies. When aggravation occurs under the use of the single, highly potentized remedy, given in a single dose, it is the best possible proof that the medicine has been correctly chosen, but that it has been given at the wrong time, or that the dose has been too powerful. The homœopathic aggravation corresponds to the "negative phase" of vaccine-therapy; and in the latter, just as in Homœopathy, the aim is to give such a dose and at such a time that the "negative phase" or the homœopathic aggravation, is just evident and no more. To put this rule shortly: *When the patient is distinctly better or distinctly worse then stop the medicine.* The result in both cases should be steady and permanent improvement. When this ceases the same medicine may be repeated, or another chosen, according to circumstances after the case has been "re-taken." This more especially applies to chronic diseases, but even in acute cases the same rule applies. In all cases the safest rule is, *not to repeat as long as improvement continues, and then a different potency to that previously administered.*

It is better not to give a medicine just before the menstrual period, unless there are acute symptoms demanding immediate relief. Allow a full week to elapse from the time the period began before prescribing a new medicine or repeating an old one. In lady patients the case should always be reviewed after the menstruation period is well over.

We append some *obiter dicta* from the writings of the late Adolph Lippe.

"*A priori*, no rules for the repetition of the dose can be laid down. In very acute diseases one single dose may suffice, or it may be necessary to repeat the dose at short intervals; in chronic diseases one dose may act for days, weeks, and months, or it may become necessary to repeat the dose daily, or oftener, for a day, a week, or even for months.

"If the action of the dose administered has once begun, and even if the improvement is slow but steady, then we know that the dose administered continues to develop its curative powers, or we may infer that the *vis medicatrix nature*, once started to develop its health-restoring office, is still at work and wants no other aid by medicines. In chronic diseases the action of the dose administered cannot develop such sudden effects; this would be contrary to the nature of a long-existing and deep-seated disease. If such a sudden exhibition of the drug-action follows its administration, if the improvement of the case is very rapid, then either the remedy acted as a palliative only, or was not rightly chosen; or if very simple and carefully chosen, such sudden improvement *generally* forebodes no good, a repetition rarely ever produces a perceptible improvement and other ever so well chosen remedies will cause rapid but short-lasting improvement.

"A repetition of the dose before the one previously administered has developed its effects, or before its effects are exhausted, causes an interruption of the internal, to our perceptions and understanding hidden, process of the interior of the organism, having for its object the restoring of the sick to health, therefore must be avoided; and, furthermore, such an untimely interference is invariably followed by results retarding recovery, and may even at times so derange the actions of the organism striving to combat the existing disturbances that the recovery may not only be retarded but be made very doubtful.

"The greatest care therefore should be taken never to repeat the dose, or administer another remedy, till the effects of the dose last taken have been exhausted. This dose may be, and often is (1) a single dose, or (2) it may be a single dose dissolved in a few ounces of water and given at short intervals, in broken doses, till the action of the remedy has fully set in. Its administration should then be stopped whether the case be an acute or a chronic one, (3) in other instances it may be a repetition of doses at short intervals, till some effect of *this* dose is apparent."

On another page we print an article by the late Dr. H. N. Guernsey explaining what is known as the "Keynote system." This is an *aid* to the selection of the homœopathic remedy, which is but little understood, and which, as a consequence, is much maligned by those who know nothing about it. There is no doubt, however, that it simplifies the selection of the remedy. We make no apology, therefore, for reproducing this article, for most of our men are ignorant of the true worth and merit of the system. It has been our constant aim for the last three years to furnish our men, through the pages of the Review with material, diagnostic and otherwise, to fit them more and more to successfully cope with problems of daily practice. If we have failed in this object, we can only express our regret.

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## BOVINE TUBERCULOSIS NOT TRANSMISSIBLE TO MAN.

BY W. B. CLARKE, M. D., INDIANAPOLIS.

Consumption, as we used to call it, is now more fashionably termed tuberculosis. It is also poetically or imaginatively designated, or fantastically misnamed "The Great White Plague," an unscientific appellation, for the gay denizens of "The Great White Way" are nowhere near such sufferers from it as the dwellers of the slums, and as Indians, and Japanese are freely dying of it, and it is about twice as prevalent and fatal, statistically, among the blacks as among the whites.

### DISCOVERY OF THE BACILLUS TUBERCULOSIS AND TUBERCULIN.

The cause of tuberculosis is now by pretty general consent considered to be an infection by the absorption of an infinitely small object called the bacillus tuberculosis (though a respectable minority state that here the cart is placed before the horse—that the disease causes the bacillus instead of the bacillus causing the disease).

This bacillus was discovered by Dr. Robert Koch, of Germany who first announced the discovery on August 10, 1882. This



bacillus (a rod-shaped body) had long been looked for, and its smallness (10,000th of an inch in length, requiring a magnifying of nearly 500 times in order to see it) was not what had prevented its earlier discovery; it is transparent, under the microscope, and so was overlooked. The great secret of Dr. Koch's discovery was that he devised staining fluids, one of which he found colored the bacilli, but not its surroundings, thus enabling them to be seen.

Dr. Koch, in honour of this discovery, was then taken under the patronage of the German Government, with orders to discover a cure for the bacillus or the disease it caused, being granted all the funds and assistants he needed in the work. Eight years after, in November, 1890, he announced his "cure," but would not then disclose its composition or source.

I was interviewed on the subject by the Indianapolis *Sentinel* of November 17, 1890, in which interview these words appear: "The Koch injection will be proved to be animal matter, probably tuberculous matter itself, since its introduction causes increased temperature, which is not likely to happen from medicinal agents." This probably was the first opinion published in the United States regarding the actual composition of remedy.

The newspapers of the United States first published the telegraphic news, of the actual composition of the remedy two months later, on January 16, 1891, on Dr. Koch's authority, with his apology that the announcement of the "cure" was made prematurely, before its perfection, by especial order of the German Government, in response to popular interest and demand. And the "perfection" has not yet arrived.

Soon after this, a small vial of the "precious fluid," as the Indianapolis papers called it, came to the Indianapolis City Hospital, contributed by the then President Benjamin Harrison, and was kept locked in the safe until used with great eclat on the few misguided patients who would voluntarily receive it via hypodermic injection.

The natural hope among the bugologists after the germ of tuberculosis had been discovered and the nosode tuberculin

introduced was that the latter would prove the "sure cure" for tuberculosis, but it soon degenerated to the position of diagnostic agent only, and in many cases in this role acted as the lighter-up of quiescent disease that otherwise might never have developed. Its danger to human beings soon became apparent, and its use was abandoned on them. To cite one instance of its unjustifiable use I may say that Franz tested with it two Austrian regiments in good health, with the result that 61 per cent. of the regiment in first year of service, and 68 per cent. of the one in second year service "reacted."

#### BOARDS OF HEALTH MONOPOLIZE TUBERCULIN.

The boards of health of the country were quick to see the great utility and advantage the official use of tuberculin as a diagnostic agent would have in continuing their "police power" hold on the people along the line of "State medicine," brass-button medicine, somewhat analogous to their manipulation of the valueless, odious and dangerous vaccination-for-smallpox scheme, with which they have so long pestered communities the country over (except where the people have learned better and will not submit).

It was new and mysterious enough to be attractive to the public, and served admirably as one of the great "scares" which the "health" boards, for "business" reasons, are so fond at regular intervals of catering to the public, and, incidentally, manufacturing patronage and "honour" for its own favored few.

So they began—with their usual official tendency to false enthusiasm and magnify their own importance and exaggerate necessities, and without the brains, judgment and experience necessary to intelligently use it or correctly interpret its effects—the really unwarranted practice of forcibly "testing" dairy cows with this tuberculin and condemning to instant death all that "reacted."

Through this action valuable dairy herds were exterminated (\$30,000 worth from one herd, forty cows from another), businesses abandoned one in which \$100,000 was invested, and by it in some cases, the richest blood of heredity forever lost,

though it had cost lifetimes and fortunes to obtain"—and with no resultant benefit to the human race.

But, thanks to the vigorous onslaughts and remorseless exposures of a few able and determined men and newspapers in regard to this unjust and unreasonable tuberculin practice, and the rebellion of the farmers, resulting in some States in relieving legislation—to apply words of a great late lamented practical politician—this "pernicious activity" is fast falling into "innocuous desuetude," and the people are beginning to better understand the "true inwardness" of the situation.

#### THE PEOPLE FRIGHTENED.

The professional alarmist and "health board" side of the tuberculosis-from-cattle question was so often and so oracularly presented that public confidence was rankly abused, and many confiding people became afraid to eat beef or drink milk, for fear of "catching" tuberculosis, something that no one ever can do in that way, for reasons that I shall later show. Add to this the health board's terrifying announcements regarding the virulent contagiousness of tuberculosis, and their proceedings and onerous requirements and crude and arbitrary rules in consonance with that idea.

The result of this constant cry of "wolf!" is that the general public was kept in a constant state of alarm, nearly a panic at times, and a consumptive person (who now must be reported to the board of health, like a smallpox case) is now being regarded with great dread, as a sanitary pariah of society, one to be ostracized, ostracized, or entirely avoided, whose very breath is poisonous and death-dealing. And in many instances positive cruelty, neglect and consequent injury follow, instead of the sympathy that is the peculiar right of this class of unfortunate, some of whom have in the past been veritable angels of sweetness and light at the bedsides of others in many cases of these and other kinds of sickness and suffering.

True, "compared with tuberculosis, all the pestilences that send nations shivering to their prayers are but the mild pastimes in which Death indulges when he has nothing serious on hand."

But if you want to avoid or resist tuberculosis the best way is to develop the ability to eat and dispose of and assimilate twice as much beef au jus and fat) and milk as you are now doing, regardless of all health board talk to the contrary, and also remembering that the United States Government maintains an extensive and expensive system for a thorough microscopical and macroscopical examination of beef at the abattoirs, inspecting ten billion pounds last year.

Dr. Knopf and Dr. Hurber, tuberculosis essayists and lecturers of great repute, declare that one tuberculosis patient could spit seven billions of tubercle bacilli in one day. So we have enough human bacilli to look out for instead of hunting up and dragging into the question the immaterial bovine kind. For according to the State Board of Health reports, 16,570 human beings died of tuberculosis in New York State in 1907, and 4,522 in Indiana, and about 150,000 in the whole United States.

#### DR. KOCH'S VOICE OF WARNING.

Dr. Koch, seeing or foreseeing the dangers threatening the people through his medical Frankenstein, then made a special study of the relation between human and bovine tuberculosis, and found that they were separate and distinct diseases, and that individuals or products of one race were incapable of transmitting the disease to the other race. For instance, he inoculated many cattle with human tubercular virus, with the result of producing only slight focal sores, soon healing, without other effects. He made this momentous announcement before the Tuberculosis Congress in London in July, 1901. This announcement served as a bombshell in the ranks of the alarmist breed of tuberculinists, and strenuous exertions were made by them to repair damages. But Dr. Koch has steadily and repeatedly maintained this position against all opposition, the last time in his paper at the Tuberculosis Congress at Washington, October, 1908, and at the national conference at Washington last spring. He explained that of late years he is paying the most attention to other diseases, notably in Africa, but will be prepared with a full exposition of our immunity from bovine tuberculosis for

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presentation at the next Tuberculosis Congress: A part of the intervening time will be spent in Japan studying tuberculosis—in a country now severely affected, but where cow's milk is not used as food. Whose word had you rather take—that of Discoverer Koch or that of a placeholding "health" officer?

That the human and bovine bacilli are coincidental only, independent of each other, and each incapable of transmitting tuberculosis to the other race, is now the opinion of many skilled investigators working along bacteriological and microscopical lines (to say nothing of many practical cattle men of great observation and experience, but who modestly pretend to know little of the "science" of the thing, but do know and assert that cattle, meat or milk do not transmit tuberculosis); and their bacilli are morphologically and microscopically much unlike.

For example, in description, the human bacilli are twice as long as the bovine, slenderer, often curved and beaded, while the bovine are short, straight, plump and without beading, and their degrees of virulence are much unlike. And the human bacilli and tubercle have acquired individual characteristics that unfit them for more than temporary foothold, much less existence, in the cow. And while the bovine bacilli may very rarely and accidentally gain simple, temporary foothold in man, its results are only localized, soon becoming encased or encapsulated as quiescent nodules, and hence harmless, never becoming generalized (scattered in the blood) or dangerous unless reinforced by the human germ, or when some animal injection, directly into the blood, is afterward used, like tuberculin or fresh cow-pox vaccine.

Darwin observed that man has given rise to many races, some so different that they have been marked by naturalists as distinct species from monkeys up, differing in constitution and liability to certain diseases. By this same principle micro-organisms are modified by conditions.

Again, the bovine and human races are so different. The human is omnivorous, the bovine herbivorous; the human pulse is 72, the bovine 40; the human temperature is 98½°, the bovine

100%. All these and other elements and race peculiarities that could be mentioned make up a condition protecting each race from the other in the matter of tuberculosis, just as we know that the tapeworm affecting fowls and certain animals are harmless to man. Then, too, the disease in man is almost always in the lungs, and in the bovine rarely.

And so we can confidently declare that of the millions of cases of daily exposure of human beings to bovine tuberculosis itself or the products of the bovine race there is no positive and direct evidence of a generalized (scattered in the blood) case of such infection, the slight evidence even of a mild and harmless case being only indirect and negative. Anything more than that is invariably caused by the simultaneous or accidental mixture of the human germ with the bovine germ, a proceeding easy of accomplishment but difficult and expensive of plain proof.

#### HEAT AND LACTIC ACID KILL THE BACILLI.

Even granting, for the purpose of argument, that the bovine tuberculosis bacilli could be capable of causing true generalized tuberculosis in human beings, it would yet be impossible to so transmit the disease by the way of the ordinary use of meat or milk. For no fact in sanitary science is better known or established than that heat for a short period will destroy the life of the bacillus tuberculosis, and not a high degree of heat is needed, 170° being enough. Meat usually gets two or three times that much heat, and for a long period, and milk gets that much heat in pasteurizing.

But pasteurization for milk is objectionable in many ways, as it injures the food value of milk, depriving it of some of its nutritive powers, destroying, decomposing or weakening some of its inherent digestive elements, coagulating the caseine, and may dissolve the fat globules by too much heat, and makes it harder of digestion and assimilation; consequently babies do not thrive on it as they would on fresh, pure and clean milk.

But milk has a much better safeguard within itself, for *lactic acid attacks and kills the bacillus tuberculosis*. This lactic acid is produced in the process of digestion from the fermentation

of the sugar of the milk. This fact has been conclusively proved by my friend, Charles H. Gage, in his extensive San Francisco bacteriological, microscopical and chemical laboratory, by bacillus culture and microscopic photographs of the cultures every six hours for seven days. This is probably the first medical society presentment of the important intelligence that milk contains within itself this effective weapon of defence against tuberculosis. For the purpose of reference I append the chemical composition of milk, which shows the base of lactic acid to be more than any other element :

Milk sugar	...	...	4.70
Casein	....	...	3.65
Butter	...	....	3.55
Salts	...	...	.80
Water	...	...	87.30—100

#### TUBERCULOSIS DESCRIBED.

Tuberculosis is, after all, purely a disease of nutrition, or malnutrition, rather, and generally follows physical excesses, wrong living, indoor life, grief, and a run-down condition ; in short, almost any letting down, neglect, or animal poisoning of the system, which renders it susceptible to the infection. It comes in protean forms, though usually settling in the lungs because of the delicacy of their make-up and abundant blood supply. Its approach is insidious, and its advance relentless, while the majority of its victims are, as a rule, persons of superior mental and moral character. Its development is slow naturally, the organs often being able, by immediate and intelligent fortifying measures, to reject and expel the infection (even if the natural fluids have not previously neutralized it), on account of their strength and high health.

Indeed, with all the learned talk about germs, bacilli, infection, etc., few have yet told us how or why the disease has taken hold of a certain person, why the expert is taken and the ignoramus left—in short, the real causes for the operation of the infection. The tuberculosis sharps are very insistent on their claim that the bacillus is quickly killed by sunlight and fresh

air, and that the disease is often curable in human patients by plenty of sunlight, out-door pure air, perfect rest, and abundant food and sleep, etc., etc. Now let them pay more attention to antecedent conditions, and insist on reversing the operation, securing all these before the disease appears, and watch the improved results. As in all diseases, statistically, the watchword must be, "keep your eyes on the death rate," so in tuberculosis we must watch for the bacilli, for their appearance can safely be regarded as always a late manifestation, as they are never ejected until destruction of tissue has occurred.

Often the trouble is localized in even a single gland, or as a quiescent nodule, or a caseation, where it may remain undisturbed through life—a powder magazine that is harmless until touched off by the injection of some fulminating animal tuberculin, serum, cowpox vaccine, or what-not, and the resultant explosion blows the ship out of the harbour. For, in strict accordance with the old utterance of Cohnheim, the great German army physician, surgeon and pathologist, after many years' experience in post-mortems and verified by the best men of to-day in their dissecting experiences: "Jeder Mann ist am ende ein bisschen tuberculose" (every one is some time or other a little bit tuberculous).

For when the "testing", "diagnostic" or "preventive" agent is forcibly introduced into a system already quivering on the balance by subcutaneous inoculation or intravenous injection the latent disease is stirred into activity, the glands and organs nearest are severely shocked and the lymphatic system always deeply affected, a necrosis is caused, and the resisting powers often overcome because the protection barriers are broken down.

Omitting these blood assassinations, the bacilli may freely and harmlessly obtain entrance to the body (in fact, are always there, even in health), and yet by the liquids of the body be neutralized or prevented from doing harm. In normal good health there is no danger from these floaters, this flotsam and jetsam, as the nasal and stomach secretions will destroy all bacilli breathed or so swallowed. Suppose there are tubercle



bacilli in the air and in dust? They are not really in the circulation of the body, even if inhaled or swallowed for the bronchial mucus will entangle and expel them, and digestive secretions will destroy them if the body is normally healthy. If this were not so we would all die of the disease. Normal nerve tone and natural resistance must be maintained if health is to be secured.

Thus we see the variegated foolishness of a board of health law that makes a man a tuberculosis victim and a criminal, subject to a \$500 fine, because he spits, as far as a real sanitary repressive measure is concerned. For the spitter is free to spit in the street or when crossing at intersections, but not on the sidewalk. As the germ is killed by ten minutes' exposure to strong sunlight, the chances are that the "gob" would be safer if flattened out on a dry sidewalk, in the sunlight, than in the moist and filthy condition of the street, as it must dry out sometime somewhere. So the board's vaunted tuberculosis "protective" measure resolves itself into a mere protective of cleanliness of dry goods trains.

The cause of anti-vivisection, now becoming more popular, and the prevention of disease, animal and human, as well, would, it seems to me, get its strongest impetus by securing an absolute interdiction of all animal injections, inoculations and vaccinations of all animals, human as well as others. Who shall say that many of the newer and severer diseases of cattle (of which tuberculosis is the worst) are not really caused by the "fooling with" they have been subjected to by "vaccine," "tuberculin" and "serum" makers? And the human race is suffering physically and financially as a consequence, of course.

The latest exemplification of this point was made in the spirited discussion in the United States Senate last February to regulate the transportation and sale of cowpox virus, on account of the demonstration of the fact there made that such virus was the cause of the great epidemic of foot-and-mouth disease among the cattle of several States, the eradication of which had cost the government hundreds of thousands of dollars, and which

led to the introduction of a bill in the Pennsylvania Legislature prohibiting the manufacture of cowpox virus in that State.

#### RELATION OF VACCINATION TO TUBERCULOSIS.

A phase of this subject that the people are or should be much interested in is that of the "State medicine," brass buttons medicine, control of their children in the way of vaccines, serums and tuberculin. While, for the reasons above given, I do not believe that in any ordinary way we contract tuberculosis from meat or milk, can we not do it by direct inoculation, those assassinations of the blood, where the natural resisting powers of the body are circumvented and the very citadel of life, the blood, is attacked direct, as we see oftentimes exemplified in vaccination, then in serum therapy, "Detre tests" and others? Even now it fairly makes one dizzy to with the mind's eye even attempt to follow the mad flights of these indirigible medical aviators along their unobstructed pathway of animal matter injections.

And the official tendency, even in "health" board lines, is undoubtedly toward the compulsory introduction of "preventive" and "curative" animal matter inoculations of many kinds, for many diseases, and for all people, young or old—and any further trampling upon of our cherished personal rights should be resisted at once before it is too late to prevent the wholesale and "epidemic" poisoning that is sure to follow. The latest of these is thus outlined by Dr. Ravenel, one of the men "honored" at the last Tuberculosis Congress at Washington, Oct, 1908, and who addressed an audience in this city last May, viz.: "The vaccination of cattle against tuberculosis may be looked upon as an accomplished fact, and the importance of this achievement cannot be too much magnified. Is it too much to hope that a similar process will be devised for the protection of mankind?"

If our "health" and school boards adhere to their seeming belief that the bovine race's main mission in life is to transmit tuberculosis to human beings, are they not particeps criminis, or, at least inconsistent, in enforcing their superstitions, abracadabra

or fetish, vaccination, on our children? For vaccine is nothing but pus, or near-pus, from a sore on a cow's udder or calf's belly!

The danger of contracting tuberculosis through vaccination was officially recognized by the International Congress of Hygiene and Demography (vital statistics) at its Madrid session in the following resolution, as published in the *New York Medical Record*: "Inasmuch as tuberculosis is easily transmitted by vaccination when it is done directly from the calf, we ask that in all nations represented at this meeting the practice should be adopted of using only the lymph of calves which have been examined post-mortem and pronounced to be free from tuberculosis." Only the lack of time and space just now prevents the adducing of abundant testimony along the line of the production of tuberculosis through vaccination. And as for other troubles caused, it is sufficient only to quote the report of the health committee of the New York State Medical Society at its annual meeting of 1907 at Albany: "It is a matter of common observation that the impurity of vaccine virus obtained in the market is the source of great suffering and danger."

#### TALK OF THE BOARDS OF HEALTH.

The health boards are not necessarily the sole repositories of all the knowledge regarding health and sanitary matters. The whole subject of the powers and duties of the boards of health ought to receive journalistic ventilation and legal disinfection. For the peculiar, politically-made-up organization called board of health easily becomes despotic unless closely scrutinized by a higher power, the people. For all power comes from and abides in the people, and whatever is right, true and honest for and on behalf of the people must be done by their trustees and agents in the conduct of their affairs. The State cannot make war upon the man, and if it does he would be justified in repelling violence by violence.

If there is anything in this world that a man really owns it is his own blood, and who shall deny him the right to resistance to all onslaughts against it, from the highwayman's

butcher knife to the vaccinator's lancet, or that of his children, whose natural protector he is? No man not even a "health" officer, has the right to disease another against his will. And the child's right to pure and uncontaminated blood should not be disputed by his education purveyors, nor his natural right, privilege and duty to education in the public schools. •

• Our health boards may well ponder these words from the *Medical Review*: "In any contest between the health board and the people, the people are sure to win, and such conflict must be avoided by a careful consideration of all phases of the question under discussion."

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## EDITOR'S NOTES.

**Albumin in the Urine.**

It is important to remember that copaiba resin, cubebs and balsams, such as those of Peru and Tolu, may prove a serious source of fallacy in the nitric acid test for serumalbumin. To distinguish the "ring" thus produced from that due to albumin: (a) it is more diffuse than the albumin ring, (b) it becomes re-dissolved upon the addition of a drop or two of rectified spirits, which would leave an albumin ring undissolved.—The *British Homœopathic Review*, December, 1909. <sup>1</sup>

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**Fehling's Test for Sugar in the Urine.**

Many substances, besides sugar, have the power of reducing Fehling's solution, though the reduction is seldom so great as it is in well-marked diabetes mellitus. Hence an erroneous diagnosis may occasionally be made if one relies entirely on Fehling's test without confirmation by the phenyl hydrazine hydrochloride test, and by fermentation with yeast. The reduction is in the great majority of cases due to excess of the salts of glycuronic acid. Drugs which act in this way are chloral, chloral-hydrate, butyl-chloral-hydrate, campher, carbolic acid, salicylic acid and its derivatives, antipyrine and drugs of that series, morphine, preparations of liquorice, amyl nitrite, volatile oils, carbonic oxide, sulphuric acid, prussic acid, mercury and lead.—The *British Homœopathic Review*, December, 1909.

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**Ether day at Boston.**

Commemoration exercises were held at the Massachusetts General Hospital on October 16th, in honour of the anniversary of the first use of ether by Dr. William T. C. Morton in 1846. President Emeritus Charles W. Eliot, of Harvard University, delivered an address in which he defended animal experimentation. A bronze bust of Morton was exhibited; it is to have a permanent place in the Smithsonian Institute in Washington. The inscription on the base is as follows: "MDCCCXIX. MDCCCLXVIII. Discoverer of surgical anaesthesia. By whom pain in surgery was averted and annulled. Before whom in all time surgery was agony. Since whom Science has control of pain."—The *British Medical Journal*, November 6, 1909.

### •The Action of Sun Baths.

The idea that it is unnatural to protect the body from the full effect of the sun's rays by clothes has led certain persons, more especially in Germany, to advocate sun baths as a therapeutic measure. Grawitz, while recognizing that exercise in the open air is useful and healthy, has recently given some account of the injurious effect of outdoor sports and "nature healing," which involve excessive exposure of the unclothed body to the sun. No scientific proof that sunlight has a specific beneficial action on the organism has, he maintains, been brought forward, while polar expeditions have demonstrated that adults can remain absolutely healthy for months even if sunlight is totally excluded. Direct exposure to sunlight, as is the case with other sources of heat, causes increased perspiration, and at times increased metabolism. But it has been shown that harmful effects are produced if the exposure is continued for more than an hour at a time, and if the head is uncovered. Grawitz states that he has seen a number of persons who have suffered from the damaging effects of prolonged exposure to sunlight, associated with the taking of the various forms of so-called "open-air" baths. In these cases the persons bathe first, then lie for a time on the sandy banks of the river or lake, then go into the water again, and so on for many hours. The chief symptoms produced by this sun bath are irregularity and acceleration of the heart-beat, systolic murmurs, increase of the cardiac dullness towards the right, high tension pulse, accentuated second sounds, and occasionally collapse. In a few cases the temperature was raised. In addition to those symptoms effecting the circulatory system, he mentions others indicative of increased irritability of the nervous system, often affecting strong and otherwise healthy persons. In some cases the symptoms were so severe that the relatives were alarmed. Grawitz stated that children frequently exhibit similar nervous symptoms when exposed to the effect of the sun on the beach at the seaside. Although they look sunburnt and otherwise well, they often present nervous symptoms which show that the change has done more harm than good. He suggests that children should not be allowed to be in the sun between midday and 4 P.M., but should play in woods or sheltered places during these hours. With regard to the treatment, he advises cold applications to the head and to the cardiac region, cold drinks, and in severe cases analeptics.—*The British Medical Journal*, October 30, 1909.

### The Ultra-Microscope.

One of the methods whereby it has been attempted to demonstrate objects which are too small to be visible under the ordinary microscope is based on the principle of dark-ground illumination. If a narrow beam of light is allowed to pass into a dark room, an observer with his line of vision at right angles to this beam can see the minute particles of dust which are illuminated, because his eye receives some of the rays of light which are diffracted from these luminous points, and is not confused by the diffusion of light from other sources. Similarly, if minute objects under the microscope are illuminated obliquely by a strong light which is not allowed to pass directly into the microscope, the objects in the microscopic field will appear luminous upon a black ground. Dr. Comandon, in a recent essay on the clinical use of the ultra-microscope, endeavours to show that this method of examination may be applied with advantage to ordinary clinical material, as well as for the purpose of detecting extremely minute objects. Dispensing with the artificial effects produced by the fixing and staining of specimens, it provides a means for the direct observation of cells and micro-organisms in the living state. The author has used it in particular for the study of the syphilitic spirochaete, and declares that it imparts valuable information as to the exact morphology, movements and biological characteristics of this organism. He thinks the method is suitable for general application in the study and identification of bacteria and other parasites, and also for investigations on the structure of cells *in vivo*. We admire the author's enthusiasm and appreciate his patient mastery of the difficult technique which is evidently to be grappled with before one can obtain satisfactory results with the "ultra-microscope." It would be most unwise to disparage any attempts to open out a new line of research, but at present the author's opinion about the value of his results appears to be unduly sanguine. Given a sufficiently powerful light, the "ultra-microscope" may be able to reveal objects which are too minute to be visible with ordinary methods, but it is difficult to understand how it can give accurate definition; and it therefore remains to be proved that in dealing with spirochaetes and other structures, which, though small, are not "ultra-visible," the dark-ground illumination of unstained material will add to our knowledge of structural details.—*The British Medical Journal*, October 30, 1909.

### A Dancing Cure.

A Highland shepherd, one Donald M'Alpin, a famous dancer, was reputed to have cured his mistress of a mysterious malady by means of dancing a reel with her, and this story being noised abroad gained him the reputation of being a successful physician. His humble cottage in Slockmuick, overlooking Strathspey, was besieged with crowds of patients who hoped to get rid of their ailments by a dance with Donald. The shepherd did not hesitate to take advantage of this stroke of good luck, and soon had a large and thriving practice. He engaged as assistant an ancient piper, who did the duties of apothecary, and the two between them evolved a course of treatment for almost every ill to which the flesh is heir. This treatment was very simple, the main features being as of indigestion, moderate doses of medicated "acqua" were taken, followed by the *seum shuil* or promenade step. Headache or local plethora was treated with laxatives, followed by *ceum cosich* or footing step, or *ceum crask* or cross step. For catarrh Donald prescribed, in order to produce perspiration, a large dose of gruel mixed with honey and butter, followed by *ceum crask* or Highland fling. In cases of serious illness, either of mind or body, he administered large doses of laxatives combined with diaphoretics, followed by the "M'Alpin leap." All these different processes terminated in the patient being well wrapped up in warm blankets, and the doses of medicine and dancing were repeated according to the patient's constitution and the nature of his disease. How long the shepherd physician continued his experiments at the expense of his confiding neighbours is not known, nor is it possible to discover what degree of success attended his administrations. But those who may be inclined to scoff at poor Donald's humble remedies and the credulity of his *clientèle* would do well to remember that these same remedies were at least as rational and decidedly more harmless than those of some other empirics who gained a European reputation; whilst the rude Highlanders who sought his advice were but displaying the same ignorance and superstitious reverence as did the cultivated society of Paris when it thronged to the consulting room of a Mesmer or a Cagliostro.—The *British Medical Journal*. November 13, 1909.

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## Cleanings from Contemporary Literature.

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### THE WAR OF THE CITIES AGAINST TUBERCULOSIS.

BY CHARLES FLOYD BURROWS, M.D.

*Syracuse, N. Y.*

It is authoritatively estimated that ten millions of the present living population of the United States will ultimately die of tuberculosis. Four hundred of these unfortunate persons are perishing every day. During the four years of the Civil War approximately one million Union and Confederate soldiers were killed in battle or died from wounds and diseases incident to warfare. Each day in the year of 1908 two-thirds as many deaths resulted from tuberculosis as were caused by war during every twenty-four hours of that sad epoch. History does not excite herself and write a page because of this solemn pathetic fact as she did over the tragic loss of life engendered by the Rebellion or do the newspapers flame it forth in headlines of wartime magnitude. Nevertheless, to-day in every city which dots the fair face of our country regiments of men and women are mustering in and marching on to eventually die in battle with this enemy—this dreadful scourge—tuberculosis.

Soldiers' graves are scattered in every burial ground in our nation. Walk through a cemetery on Decoration Day, note the frequency of the fluttering flags and fading flowers which indicate where our heroes sleep, and then remember that one grave among every eight which surrounds them holds a victim of the great white plague. Why should this be so? Why should battalions of our citizens nearly as large as those which fell from bullets in the ugly pursuit of war die each day year in and year out? Why should Death continually stalk through our midst, daily steal such a sum of living humanity and cause no consternation by the crime?

Principally because man is fighting an unseen enemy when he contends against the germs of tuberculosis. These bacteria—the tubercle bacilli—are soldiers whose uniforms are invisible, whose manoeuvres are in secret. They attack by night as well as by day; their toxin-ammunition is as deadly as shimose; and their numbers are beyond computation.

The realization of danger from invasions of such an enemy of man has aroused a belligerent disposition in many men—medical men especially. They are endeavoring to warn and teach other people about this disease; to arouse a fighting spirit that will battle energetically against its subtle attacks and eventually overcome and annihilate them. But, alas, the great mass of the people are more or less indifferent concerning this danger, so vital to many of them. As in Europe during the Middle Ages before the discovery of vaccination by Jenner when small-pox was so epidemically prevalent, that millions died of it, so with tuberculosis at present familiari-

ty has bred a certain amount of contempt for its peril. The average individual only commences to notice its havoc and malignancy when a friend, a relative, a member of his family, or he himself is attacked by its insidious onslaught. Then he suddenly awakes from his lethargy and wonders impatiently why preventive measures have not been instituted that should have exterminated it before.

- So it goes ; meanwhile tuberculosis occurs universally in rural districts and in municipalities.

While it prevails frequently among the population of villages, towns and country sections it is in the cities, however, that it is concentrated ; finds a stronghold ; and becomes an easily spreading scourge. Here humanity crowds itself into close, airless quarters and indoor occupations predominate ; here poverty is segregated and condensed in maximum intensity. On such intricate battlegrounds the disease must be vigorously assaulted if it is to be conquered appreciably.

- All classes of people are martyrs to it ; the rich, those in moderate circumstances and the poor. Therefore it develops that—except the few victims who are financially able to seek out an individual climatic suitability in some famed health resort for lung sick invalids and prolong their stay indefinitely in such surroundings where the benefit obtained from altitude and equable climate is often more than neutralized by loneliness and homesickness ; or the small number besides these who find accommodation in the pitifully few sanatoria for incipient tuberculosis which exist to-day—the great mass of tuberculosis sufferers are obliged to contend with this disease amid their home surroundings.

Especially is this true of the poor and the median classes. Nor is this always to be regretted. The trend of modern medical observation and experience proves more and more conclusively that the results obtained from determined, properly executed, methods of curing consumption at home are more satisfactory and oftener successful than haphazard methods in strange surroundings.

And why should this not be so ? The essentials for curing consumption are practically the same in Connecticut or California—New York or New Mexico namely living twenty-four hours each day in the open air—sitting in the sunshine in the day time ; sleeping in the moonlight at night ;—increased feeding ; and rest for the body and mind. This trinity of air, food and rest is the modern panacea, the up-to-date outdoor treatment for tuberculosis. Air alone may not cure ; neither will increased feeding nor rest. Only when faithfully, carefully associated through many days and months can a cure be expected to result anywhere.

To make these means soon and successfully curative in consumption one must perseveringly avail one's self of them in the early incipient stage of this malady. They can be instituted very often at home as well or better than abroad even though a home be humble and in the midst of a big city.

Although the white plague is not a respecter of persons and finds its prey in all walks of life ; in happy homes and in miserable hovels ; in

gilded palaces and sombre prisons ; among saints and sinners, young or old, this fact remains that the poor are its greatest victims. They also are its greatest disseminators.

The poor are often improperly fed, clothed and housed and are congregated into unventilated tenements, basements and hovels until the population of a city acre frequently approaches in number a similar area in the crowded quarters of Peking, Calcutta or Bombay ; large families live in small apartments, in dark, dingy rooms huddled together like cattle in a calf ; they sleep in foul-aired bedrooms, unheated, unlighted, often thick with tubercular germ laden dust left behind by a previous consumptive inmate, they work long hours a day in filthy, close, unsanitary factories, stores and sweat-shops ; and many of them are illiterate, drunken and dupes of vice, who spit on the floors of their homes, on sidewalks and in public conveyances with an utter abandon of decency. Is it any wonder then, in view of these facts, why tuberculosis among the poor and indigent should claim the largest number of victims ?

Is it any wonder also, associated as they are in our intricate social life with all other classes through contract and the channels of commerce and manufacture, that they should spread freely from their own environment into every other circle of human activity the germs of this disease in death-dealing quantities beyond computation ?

Each year in New York city alone several hundred homeless consumptives are picked up on the streets and in cheap lodging houses in almost a dying condition. One year thirty-seven were found dead on park benches, in hallways, or wherever the germ spectre of death chanced to overtake them. For months undoubtedly their aimless lives had led them about the streets of the metropolis, coughing and expectorating millions of tubercle bacilli for the hurrying multitude to grind into dust and inhale.

Principally on account of such conditions and causes and from many others beside, New York city annually has from ten to fifteen thousand poor consumptives to deal with, care for and control. What is true of New York is also true in a greater or lesser degree of every city, both small and large throughout America. This constant dangerously alarming development of consumption among the poor has not produced to any extent adequately proportionate municipal plans and accommodations for coping with and caring for the unfortunate victims of this disease or of preventing the future spread of the malady except in a few very large cities like New York and Boston. Even in these there is opportunity for greater improvement and progress.

In dealing with the tuberculosis predicament a city must govern and control systematically the tuberculosis cases which are already present in its midst. In other words, as some one has pithily said : "Consumptives must be found at the right time and helped in the right way until they are well. If carelessly ignored or neglected too long the full penalty must be paid by protecting the public from danger and helping the poor victim until he is dead." At the same time a city must arrest by every

possible means the future progress of infection so that an ultimate extermination of this germ disorder may be effected.

Such a problem is stupendous and multiform and must be attacked by broad methods. It means that two separate active campaigns which overlap at many points and diverge at others must be carried on simultaneously. Thus while the immediate instituting of a tuberculosis hospital to care for the hopelessly sick consumptive poor—like those who as we have seen, are sometimes found neglectfully dying in parks and hallways; and others, too, who are scattering infection in a careless, widespread fashion—is a necessary requisite in stopping the present distribution of the malady by segregating these intensely infectious cases and preventing immeasurable jeopardy to hundreds of people, it has no direct influence in causing the future erection of modern sanitary tenements and dwellings for the pure or upon the better ventilation of factories, stores and workshops—the often notoriously bad conditions of which serve to fit and fertilize human soil for tuberculosis seed-germs. On the other hand educational agitation toward remedying these present tenement and dwelling house conditions by proper sanitation and the erection of numerous new apartments, or for providing better ventilation and lighting of industrial buildings, while of no relief to a dying consumptive or preventive of his spreading bacilli to other persons, is just as essential in its way as a hospital. It also ultimately tends to nullify the very conditions which make such an institution immediately necessary and so helps even more in the long run to eradicate the disease.

Right here, let me positively and vigorously assert that the trouble, confusion and disappointment in the past, as well as at the present time, in making an appreciable impression upon the inroads of tuberculosis, or in decreasing its prevalence and mortality has been the result of inharmonious, misarranged and disunited efforts which have been spasmodically put forth at different periods by various individuals, organizations and municipalities.

To illustrate: One individual spitefully attacks the expectoration problem. He asserts that it is only a matter of time when tuberculosis will perish from the face of the earth if this disgusting vice be stopped. He widely advocated this theory and perhaps produces some fleeting impression, some transitory improvement. Meanwhile his zeal in this one direction makes him lose sight of all other distressing features of tuberculosis. Never mind the coughs which are painfully racking weakened frames! Never mind the hundreds of destitute consumptives who are dying for want of food and fresh air! Just stop the spitting! Tuberculosis will be conquered and there you are!

Or an organization decides that educational methods is the means whereby great results can be obtained in combating consumption. Printed advice is distributed freely; exhibits are arranged; lectures are planned; and every avenue leading from the portals of instruction is followed painstakingly to the end. But while this is going on tuber-

culous cows produce diseased milk and it is consumed unknowingly by the members of the organization and other inhabitants of the city. The poor are crowded closer into dirty hovels and tenements; factories dingy and unventilated are built; consumptives go about unknown, unregistered, uncontrolled; and death certificates as frequently as ever bear the solemn record "pulmonary tuberculosis." "

« Or again a municipality ponderously arouses itself and decides that something must be done to diminish the great white plague. An ordinance is forthwith adopted against expectorating indiscriminately on penalty of arrest and \$50.00 fine; small notices are placed in conspicuous places warning people to this effect; physicians are requested—instead of required—to report all cases of tuberculosis to the Health Bureau; some dwelling places where consumptives have lived are hurriedly fumigated; and a few tuberculous cows are slaughtered to prevent the sale of impure milk. But during this incomplete crusade what becomes of the homeless victims of lung disease, who sleep at night in cheap, poverty-stricken lodging houses and who without a qualm, expectorate on the floor during their coughing paroxysms? Who endeavors to influence the tenement owners to renovate their property and make it sanitarily habitable? What happens to the child who sleeps in a stuffy cubbyhole bedroom with a tuberculosis parent and breathes and rebreathes each night for months foetid germ laden air?

Now, the fact is, there are many ideas, plans and procedures for conducting the war of a city against tuberculosis which in varying degrees are fundamentally valuable. They need thoughtful selection, co-relation and balanced adjustment one with another and must be used in unison largely at the same time. They must not be instituted disproportionately, or be disconnected, but must fit together for their purpose like the shafts and cog-wheels in a powerful mechanical contrivance. No single project or half-way plan will ever solve the present municipal problem of tuberculosis. Only by a simultaneous advance along all lines can we crush out the large amount of tuberculosis now in our midst, gradually arrest its progress and finally eradicate it from our cities.

In waging municipal warfare with this disease a city, first of all, must organize an efficient bureau of health and place it in charge of an aggressive-medical general capable of directing an active campaign against tuberculosis. This bureau must be developed and broadened in scope until it will be to a city in such a fight what a war department is to a nation during hostilities. Such a department of health is the only logical organization by which a city should attempt to carry on anti-tuberculosis measures because of the following reasons: its influence can readily get adopted necessary health ordinances; it can successfully command the assistance of other city departments, such as the law, building, police, etc.; it has a legal status with the people and prestige of potential power; it has in many cities an already established helpful influence among the poor and has accumulation of useful data pertaining to general health matters

which are necessary auxiliaries in subduing tuberculosis; and, finally, it has sufficient financial resources back of it whenever a city earnestly desires to combat tuberculosis to enable a campaign to be prosecuted in a broad, well-proportioned and continuous manner. Besides, independent organizations and societies for preventing tuberculosis which at any time may be in existence in a city, and all philanthropical persons interested in the task can easily become allied with a bureau of health and work under its direction just as during the Civil War the sanitary and Christian commissioners rendered helpful assistance to the army hospital service.

The next necessary requirement after organizing an efficient health bureau is the registration in this office of every case of tuberculosis, whether of the skin, bones or lungs. This must be legally enforced and be obligatory upon every physician with no exceptions. Each tuberculous patient who comes under a medical man's professional attention must be reported promptly just as contagious diseases are reported to-day in most cities, unless years behind the times. Such registration provides at once a knowledge of the amount of tuberculosis present in a city and shows its locality. No single factor in combating consumption is more important than this one. If a city under its charter has not the legal power required to adopt an ordinance enforcing registration of this malady, then a State Legislature should be persuaded to amend it. Unless registration can be instituted and enforced a city will be helplessly handicapped in attempting to reduce the death rate of tuberculosis. There is no other way for a health bureau to get into touch with consumptives; to provide supervisory measures and render helpful aid; or to prevent careless, unnecessary spreading of infection among the poor.

When registration is in practice a map of the city can be hung in an office of a health bureau and the street locality of every case approximately noted by sticking in a pin at the particular spot on the map. Different colored pins can indicate different forms of the disease. The plan gives a birds-eye-view picture of the tuberculosis battlefield. It conveys a suggestive relationship of cases one with another and in conjunction with other health records may reveal hidden causes for their increased development in some quarters. In scores of other obvious ways registration of tuberculosis is beneficial and permits of organized method for the control of the disease.

After registration in importance comes the establishing—according to the size of the city—of one or more free municipal tuberculosis dispensaries. ("Preventatoriums" or "Clinics" they also often are termed.) In a city of fifty thousand population one will suffice. In larger cities there should be an extra one for every additional fifty thousand people. Wherever a city requires two or more dispensaries they each should have a well-defined precinct, just as public schools do, but should be distributed more equally apart. This may cause some dispensaries in congested areas of a large city to develop out of proportion to those having a more suburban location. But even so a preventatorium must not cover territory

so extensive as to hamper its beneficial purpose. Such dispensaries can be located and equipped inexpensively in the cheaper office buildings or empty stores where rents are comparatively low ; in vacant houses in the more outlying sections of a city ; or in any suitable accommodations adapted for the purpose. Nothing elaborate is required. Only sufficient quarters are needed to provide space for small officers, examination rooms and an apartment for waiting patients.

The function of a dispensary primarily should be to supply free medical aid to needy ambulant consumptives and to assist them as far as possible toward curing their diseased tissues in their home surroundings. They should also assist in ameliorating the sufferings of the more hopeless, bedridden patients, and teach them how to avoid infecting other people. Dispensaries, too, should act as distributing depots in daily supplying needy patients in their territory with nutriment, such as eggs and milk—a necessary food in consumption at all times. This is done in Boston very successfully. Many other needful articles should be carefully and wisely dispensed through an agency of this character, such as warm clothing, woollen bed, blankets and canvas appliances for obtaining fresh air in the day time or at night by lying in a bed beside an open window. All these things would promote successful home treatment of numerous indigent consumptives and would encouragingly help them over many obstacles in the steep, rough road they are forced to travel.

The dispensaries furthermore should collect, correlate and pass on to a health bureau for further correlation records of all registered tuberculosis people in their territory ; study the relationship of these cases and enforce sanitary restrictions for their management among them ; and provide proper fumigation and disinfection for contaminated dwelling places previously occupied by consumptive inmates. They should also furnish freely physical examinations of the lungs and microscopical tests of sputum, thus better facilitating early diagnosis of lung trouble among the poor ; assist in obtaining appropriate outdoor occupations for consumptives who often are obliged to labor to support a family ; conduct evening lecture courses for teaching consumptives about the intricacies of their disease, how to contend against it, how to prevent spreading infection ; and serve constantly by all these means as a helpful educational force in tuberculosis among the inhabitants of a city.

Every dispensary should be under the care of a physician, assisted by a nurse or two, and should be open for business an hour at least each afternoon and evening. The members of visiting nurses associations—or similar organizations of nurses which are active in most cities—and the younger doctors should be allied with each one to act as inspectors of the homes of tuberculous patients discovering thereby the possibilities for establishing even a rough but practical scheme for outdoor treatment in conjunction therewith. Besides they could distribute advice—both verbal and printed—to a patient's family concerning the peril of careless expectoration, of living without plenty of fresh air and sunshine, and of

not recognizing early the serious significance of such suspicious symptoms as persistent morning cough, emaciation and spitting of blood.

Such a general dispensary plan is practical for any city and comparatively inexpensive. It provides strong outposts in the enemy's country that form when linked together a formidable chain of forts from which a city can advance in every direction upon the enemy tuberculosis and eventually exterminate it from many of its subtle fastnesses.

Next in necessity to a registration dispensary system comes the erection and equipment of a municipal tuberculosis hospital for the quarantine and care of those consumptives among the poor who can not be managed safely or properly in their customary environment.

It sometimes has been advocated as wiser to first establish a registration dispensary system in commencing the campaign of a city against tuberculosis and let this step precede the beginning of a hospital rather than for a hospital to develop simultaneously with it. This is all very well as far as it goes. But, alas, halfway measures always have been the hindrance in combating consumption. As well try to deal with insanity minus an asylum, or to police a city without a place to detain the criminally dangerous element of society as to successfully cope with the tuberculosis problem without a proper institution in which to manage various individuals afflicted with this disease.

Only by a close association of a hospital with registration and dispensaries can a triumvirate of essentials be established. There must be in any city this intimate coalition of the fundamental requirements for the stupendous task of fighting tuberculosis if results worthy a contest are to be obtained. Coincidentally, then with the establishing of registration and dispensaries a city should commence to build a hospital; cheaply at first and on leased land if necessary. In five years public sentiment will demand its enlargement, improvement and permanency.

It should begin by procuring a suitable area of land on some elevated suburban site nearby a street car line, where air is free from dust and smoke. If possible the place selected should be several acres in extent, having a wide expanse of beautiful, open country with forest-clad hills stretching away in the distance. Such a spot overlooking a wide vista of natural beauty is restful and inspiring, never monotonous or dull and affords a cheering outlook that adds many an idea, many a changing thought to the lonesome, depressed minds of the unfortunate consumptive men and women, who are obliged to sit idly out-of-doors as the long days drag slowly by.

On such a location—or one which approximates it as nearly as conditions allow—a city should erect inexpensively a medium-sized two-story wooden administration building comprising an office, examination room, drug room, dining room for patients, kitchen, bathroom and quarters for nurses. Around this should be grouped at liberal distances, according to a city's size and needs, several board shacks or cottages which will accommodate from four to ten patients apiece—~~an~~ equal number for both



men and women. These should be constructed one story in height on a post foundation and should be heated when necessary with stoves. Glass covered verandas twelve feet wide should extend entirely around each one so that a sick person may follow the sun about or elude the wind. Each shack should be made to enclose one central room with bathroom attached and have plenty of swinging windows and a glass door on each side. Every door-way should be wide enough to allow a hospital bed to easily pass through and so permit patients the privilege of outdoor sleeping at night or—if too weak and ill to sit out in the day time—of lying out in bed all day.

The advantage of building several small shacks instead of one large building is because it admits a grading of the various types of cases and is cheaper. It also allows patients in different stages of the diseases to be grouped properly. Thus instead of placing four hopeless and helpless consumptives together in one shack they can be separated and mingled with those who have improved and are progressing toward recovery under open-air treatment. This permits convalescents to act as teachers and to furnish by their example and improvement inspiration and stimulation to others. In a city with over two hundred thousand inhabitants it might be wiser and more practical to establish more than one hospital. The advanced and hopeless cases then could be cared for in one; intermediate and incipient types in another.

While this outline plan for a tuberculosis hospital is rough and does not include minor details the foundation principle is the one prevailing at that wonderful institution, the Adirondack Cottage Sanatorium, established by Dr. Trudeau at Saranac, N. Y.—though carried out there more elaborately and on a larger scale.

Such a scheme is not visionary or impractical. The initial expense of establishing it would be as small or less than any arrangement which can be constructed wherein the consumptive poor can obtain air, food and rest and pursue outdoor treatment in a scientific, up-to-date manner. It further has the advantages of being easily and quickly established and equipped and of being maintained at a minimum expense compatible with this purpose. It also allows of extensions, amplification and growth as demanded and when it has proved its worth sufficiently permits future replacement by better accommodations without much loss.

The construction plan, too, of the shacks is adapted for giving patients the fullest advantage of open air treatment. On the wide verandas patients could sit out-of-doors all day in all kinds of weather and nurses could easily give them nourishment, care for their sputum, and make necessary clinical observations. At night they could sleep out the year round. Sleeping out-of-door is only a matter of detail and sufficient equipment for keeping warm when one has a properly protected place such as a sheltered veranda. And right here it is worth noting that outdoor sleeping for all stages of consumption is a valuable adjunct to other treatment. If being out-of-doors twelve hours in the day time is

essential in tuberculosis, then sleeping out twelve more at night is additionally beneficial. To a victim who is in the quicksand grasp of consumption a whole day is none too long in which to develop and keep up momentum of extrication.

In all the months of the year excepting the cold winter ones tents could be used in addition to the shacks and would easily and cheaply furnish considerable extra space. In a Massachusetts city old street cars were procured and utilized with fine results, though they are not as adaptable as shacks or tents.

In such accommodations suitably equipped and provided with the requisite hospital paraphernalia necessary for the purpose a large number of consumptives could pursue outdoor treatment and be cared for economically and satisfactorily. A physician could have charge of the hospital with sufficient nurses to render necessary attention and it could be conducted in close association with a health bureau and dispensary system. It could derive its patients largely—after inspection and investigation of their cases and homes—by health officials connected with these organizations selecting them. This would prevent overcrowding and would preclude anyone imposing on a hospital who could as well or better follow outdoor treatment at home.

As previously stated, the consumptive poor are the ones who through ignorance, carelessness and utter disregard of the health and welfare of other people oftenest spread tuberculosis by indiscriminate expectoration on the streets, in their homes and places of occupation.

Too poor to cease working or properly care for themselves they absorb large quantities of patent alcoholic and morphine nostrums and so gradually drift down the current of consumption toward the maelstrom of the end, spreading as they go the disease to others who will follow them along the same way. Among them are the infectious—almost contagious—type of cases which a city if it wishes to lessen or stamp out the malady, must care for in a hospital. They must be segregated either willingly or compulsorily. Unless they are controlled and managed efforts in other channels to prevent the spread of the disease will prove unavailing and a task of Sisyphus.

There are other tuberculosis sufferers besides these indigent ones which a hospital should plan to accommodate. Scores of men and women want to get well—or at least be made comfortable meanwhile if die they must—and are eager to do the right thing toward preventing infection of other people, but they have no opportunity in their miserable poverty-stricken homes. To prove this, let me cite an instance personally observed :

In a second-story apartment a family comprising two men, two women and a child lived huddled together in five small rooms. Two of the number—a man and a woman—were in the last stages of consumption, weak, emaciated and helpless. For nine long months they had been running a race for the grave and, finally, the man won—the woman

finishing a close second. Now, during these months amid the almost continuous duet of coughing and spitting infection was spread thickly through the small apartment. Nevertheless, neighbors, friends and relatives came and went freely, and the six-year-old boy romped and played, inhaling the germ-laden dust his feet kicked out of the dusty carpets. At night in a little, stuffy, unventilated room in his crib, at the foot of his sick father's bed, he struggled to get his share of the close, moist air. Who knows what the future will reveal in his lymphatic glands, bones or lungs from such a prolonged exposure? Who knows, too, when the other members of the family may commence to cough, sweat and emaciate?

As the dying man neared his end friends and relatives came more frequently and remained longer, and the broom and duster were often busy slicking up the modest apartments, thereby saturating the air with dust for them to inhale while making their call. Who wants to assert that among the number of those visitors no fertile soil was found for the implantation of the tubercle bacilli they breathed in?

As the weeks went by these two unfortunate victims of the white plague begged for air. They wanted to try to get well—to be allowed a chance. Their little quarters were to them a veritable black-hole of Calcutta. The only ventilation was by small windows opening on noisy streets. In the summer the dust and flies came in; in the winter the cold. *They absolutely had no chance at any time to recover, improve or be comfortable under such conditions. From the start their only alternative was death.*

Similar cases or worse are the frequent experience of general practitioners of medicine everywhere, year in year out, under the usual inadequate order of things. Hospitals for every other sufferer but none for such as these! No place where they could go and for a normal sum obtain the blessing and comfort of fresh air good food and quiet rest! No place where the gospel and religion of right living could be experienced and learned and where they would not be a menace to their family and others.

Dr. Darlington, health officer of New York city, recently advocated a plan which should be applicable and serviceable in any municipality in the working out of a tuberculosis hospital located on a site adjacent to a street car line and not too remote from the center of a city. He said, "There are many tuberculosis patients who must work to support a family. Why not allow them to come at night to a hospital and remain until morning? They could sleep out of doors—something they could not do at home;—have a proper meal with eggs and milk each morning and evening; and carry away a prepared lunch for their dinner which a weakened digestion could manage. Under such a course for a few months improvement would follow and with the education it would give about tuberculosis and hygienic living would enable many of them

to return home and work out there an ultimate cure." Such a scheme is not fanciful but is founded on sound, practical principles.

At the present time I have a man under consideration who has a well marked case of pulmonary tuberculosis of a slowly advancing type. He works each day loading 100 pound sacks of plaster and as he does so expectorates freely around them to the danger of other people. He lives in a cheap boarding house, sleeping in a cheerless, unventilated bedroom opening into the rooms of several other laboring men. What chance does he have under such a regime? Sooner or later the baneful effects of his present occupation and environment will break him down and he will become a hopelessly sick consumptive—a burden and a further menace to society.

This case is analogous to scores of others in every city. Were all such cases registered, were they inspected and advised by a dispensary system, many of them could be induced to try outdoor treatment at night in a hospital. In addition, arrangements could be made, through the assistance of Chambers of Commerce or similar organizations, whereby most industrial concerns would employ these patients in preference to other help in filling all outdoor occupations. This is done in New York and more than one ticket chopper on the elevated car lines is or has been tuberculous.

Upon their return to their old environment after benefiting by a few months' course of night treatment at an open air institution with the salutary lessons that this course would give them they would be supervised more willingly by dispensaries and would be encouraged to pursue further curative measures under such direction and help.

It is the "submerged tenth" who need assistance and education in tubercular matters. Extended to many of them in this fashion it would have a helpful and wide influence at once and would prove eventually a preventive measure of the first order.

Whenever a city will enforce the registration of tuberculosis and establish dispensaries and a hospital such a city will be in readiness to begin the herculean task of attacking and subduing consumption. It will have equipped itself, so to speak, with seven leagued boots. In other words, a long stride will have been taken toward the final annihilation of this hideous, deadly sickness. Not only can it contend with, care for and control the present tuberculosis situation by such means thus at once preventing an increase of consumption, but it can carry on in conjunction with these measures a host of auxiliary procedures whereby future development will be prevented. It also can institute important and far-reaching but less direct processes that ultimately will wipe out the very evils which underlie its causation and perpetuate its dissemination.

To this end every city must face the problem of the careless indiscriminate expectoration habit which so universally affects all classes of male humanity. So long as tobacco is used by thousands of men; so long

as multitudes of people are ignorant and indifferent concerning the essentials of personal hygiene, just so long will different types of men, whether hard and healthy or coughing and consumptive, distribute their oral discharges about as thoughtlessly and more dangerously than dogs mad with hydrophobia unless active and persistent means are used to prevent it.

To produce an early appreciable cessation of this filthy habit and reduce its evils to a minimum a city must establish and persistently enforce a suitable ordinance against it. Instead of an impractical fine of \$50.00, which at present is the usual warning penalty wherever an infrequent sign forbidding the practice is seen a smaller maximum fine should be demanded. If a fine of \$1.00 for punishing the first offence of this character and \$3.00 for every similar offence thereafter were legalized police officers could be required more easily and expected oftener to arrest spitting offenders. The small amount of this fine, the embarrassment and loss of time resulting from arrest and a ride in a patrol wagon, and the disgrace and notoriety of appearing in police court with a newspaper mention afterwards would influence most individuals after one such experience in the wisdom of obeying an expectoration regulation.

An anti-spitting ordinance should empower and require, in addition to a city police force, many semi-public officials, such as street car conductors, janitors of public buildings, men in charge of theatre galleries, etc., to take into custody anyone caught expectorating on the floor. It should also provide for the placing of elevated sanitary receptacle with running water on every street corner for people to expectorate in when necessary. It should further provide for placarding freely all public buildings, railroad stations, ferry houses, boats, street cars, factories, shops, halls and theatres thereby explaining the dangers of expectorating indiscriminately and legally warning people against the practice. Public parks and streets, too, should be placarded similarly with visible and durable signs.

With such municipal provisions properly instituted and vigorously enforced a city would soon diminish this pernicious habit and so forge another link in an anti-tuberculosis chain.

Another move that a city must make in advancing upon tuberculosis is along the line of a pure and sanitary milk supply. If it is a fraud to dispose of watered milk it is a crime to sell dirty, diseased milk—particularly if that milk comes from a herd of cows in which are mingled several that are tuberculous.

Bovine tuberculosis is seldom or never found among cattle around Havana, Cuba, for there they are out-of-doors all the time. But in herds that furnish milk to American cities it is revealed by the tuberculin test with fearful frequency. Especially is this true in the states along the Canadian border, because here during several winter months each year cattle are housed in damp, unventilated stables. They often are fed, watered and exercised improperly and so do as easily fall victims to tuberculosis under these circumstances as do many human beings under almost similar ones.

While milk from a tuberculous cow does not necessarily convey the tubercle bacilli unless the udders are affected, such milk is positively unsafe for children or grown people to consume and easily paves the way for the coming of consumption.

To prevent the production of such tainted milk a city must inspect the farms, barns and herds of every farmer offering milk for sale. Furthermore it must insist upon sanitary improvements and the application of the tuberculin test until all danger from tuberculous or impure milk is obviated.

In furthering a milk reform it would be advisable for a city to procure a farm and provide a model establishment as is done in Rochester, N. Y., to illustrate how cattle should be stabled, fed and cared for and how clean, pure milk should be produced. This place could be open for inspection to farmers interested in obtaining more milk and would furnish a standard example for them to emulate at home.

Such a milk farm could be utilized meanwhile to produce the milk and cream needed by the municipal dispensaries and hospital to supply the demands of the consumptive poor, which these institutions would be curatively assisting. A large hennery also could be established on the farm whereby sufficient fresh eggs could be produced daily for similar use. A farm thus would fulfil a double purpose and would be an economical project in furthering these ends.

In addition to the foregoing plans and devices for prosecuting a campaign against consumption a city must require the authorities in charge of each general hospital and eleemosynary institution within its boundary to provide suitable quarters and equipment for a more scientific application of outdoor treatment for those cases of tuberculosis which always gravitate toward and accumulate within these establishments. A more severe supervision of the sanitary conditions in lodging houses, in kitchens of boarding places and hotels and in shops, factories and all working places officially must be observed; inspection of meats, bakestuff and foods exposed for sale must be more closely exercised; agitation must be aroused for the erection of better ventilated, better lighted office buildings, factories and shops; more public parks and free baths must be established that the benefit of fresh air, sunshine and water may be obtained easier by the poor; and congested living quarters must claim more earnest consideration.

Modern tenements are needed that are properly lighted, ventilated and sanitized and that will have rooms and apartments for rent within the reach of the poorer classes. These must replace the dingy, dirty ones of to-day until there shall be no excuse for a human being living amid such horrifying conditions as the poor now are often compelled to do. Such sanitary tenements are proving practical in London, New York and Chicago, and are returning a fair interest on the money invested. Hundreds of them are needed in every big city in the United States. In the smaller cities for those who are forced so often to dwell in hovels, modern

dwellings, sanitarily constructed, renting for a small price are required by the thousand.

In connection herewith it is interesting to note the wise recommendations of a progressive New York City Academy of Medicine: "We call attention of the Academy to the fact that there is growing in our cities a tenement house population made up of the lowest grades of European laborers that is a menace to public health and that there are landlords who permit the grossest abuses of the health laws in the tenements occupied by these people. Before these places become more numerous and their practices more baneful they should be put under strictest sanitary regulations. Many people scoff at the refinements of modern sanitary ideals. It is pertinent here to quote from the report of the health officer of London, that since the passage of the public health act of 1901 there has been a diminution of 30 per cent. in the death rate of that city and that London's death rate for 1906 (15.1 per thousand) was lower than that of any of the large cities of the world."

Simultaneously with all other reforms an educational movement must be continuously and intelligently kept up. Medical men and other lecturers thoroughly conversant with the tuberculosis question must be engaged to appear periodically before the labor unions and discuss this topic with the members, explaining the danger of carelessly expectorating while at work or elsewhere, of sleeping in closed, air-tight rooms, of dissipating in various ways and of neglecting to consult a physician at once when persistent symptoms of lung trouble arise in themselves or in one of their family. Only by the early recognition of incipient phthisical symptoms and the prompt instituting of appropriate curative treatment can the ultimate development of the pitiful, hopeless consumptive be prevented. This fact must be impressed by education not only upon members of labor unions but upon everybody.

Children in the public schools must be taught along with geography and grammar a knowledge of tuberculosis; how to avoid and how to prevent it. This must take the place in their physiology text books to a reasonable extent at least—of the distended, distorted chapters now devoted to the harmful effects of alcohol.

Ministers of the gospel must be encouraged to stand up in their pulpits and preach more sermons on sanitary living and health matters. A little sermonizing for the body once in a while is as beneficial as for the soul. If you doubt this fact, listen to the chorus of coughs which interruptingly emanate every Sunday morning from the throats of any congregation facing a clergyman, and be convinced. Besides, it is no more self-sacrificing for doctors of divinity to thus indirectly endeavor to diminish their income from delivering funeral orations over dead consumptives than for doctors of medicine to continuously advocate anti-tuberculosis measures whereby their professional earnings will shrink more than one-tenth in amount.

Newspapers, weekly, semi-weekly and daily must be enlisted in the fight. These publications are read by the masses, rich and poor alike, and powerful, persistent educators of the public mind. For years, though, by pernicious, misleading advertisements appearing in their columns they have sown influences broadcast which have built up the business of numerous concerns manufacturing worthless patent alcoholic and morphine nostrums for curing consumption into rich flourishing industries. As the consumptive poor have hopefully absorbed bottle after bottle of these fake cures and have been made worse after each, one, the hard earned, sorely needed money they have given up therefor indirectly has assisted newspapers of all kinds very materially by providing a rich advertising harvest. They therefore willingly ought to educate people about tuberculosis by way of atonement.

When a city has well under motion a campaign against tuberculosis conducted according to the plans here advanced it should combine with other enterprising municipalities that laws may be enacted by State Legislatures for the founding of more sanatoria for the free treatment of incipient pulmonary tuberculosis similar to the one provided by New York State at Ray Brook in the Adirondacks.

Better laws are needed, too, for the destruction of tuberculous cows and to protect one State from another so that such cattle can not be sold or shipped into territory which has taken rigid precautions against them. Statutes must be enacted also to improve and more closely supervise all health matters—particularly those relating to consumption—in villages, small country towns summer resorts and rural districts.

National aid, furthermore, must be enlisted to increase the stringency and to prevent the weakening of present immigration laws which stop consumptives among the crowds of foreign aliens at our doors from entering this country.

Only by such state and national enactments can we shut off countless, unseen tributaries which little by little tend to widen and deepen the stream of tuberculosis that flows in our cities.

If one stops to consider the cost to a city of a crusade against tuberculosis such as I have proposed, with its registration of consumptives, its dispensaries and hospitals, its milk and egg farm and the other requisites which go with all these one is likely at first thought to exclaim: "Impossible, the expense is too great!"

But on the other hand, first examine for a moment the frightful economic loss tuberculosis causes. Think of the men and women cut down in the prime of life at the period of their greatest efficiency; of the labor it has required to rear, educate and develop them into a producing power; of the time and material it takes to care for them even as we do now.

On the best authority it is estimated that every year the United States sustains an economic loss from tuberculosis of over \$300,000,000! What would the figures show if we could add in dollars to this the physical suffering, the heartaches, the agonized disappointments which this mon-



trous disease also produces in thousands of happy homes throughout our cities?

Expense must not stand in the way of crushing out this cursed sickness now any more than it did in those days when, with wartime enthusiasm, two billions of dollars were expended in abolishing slavery. Even though the price be large each city must shoulder its proportionate burden in stamping out tuberculosis.

What a field for philanthropy is this, and yet how shamefully overlooked is compared with other established benevolences in our cities. Reflect for a moment on the coughs that would have been subdued, on the suffering that would have been prevented on the lives that would have been saved had tuberculosis hospitals, instead been erected in every city where libraries so willingly have been donated or universities so lavishly endowed. Educational advantages are not to be decried, but they should not be given out of proportion to necessities more vital for restoring health to the sick members of our great national family.

Unfortunately, there is no remedy known at the present time which can cure consumption in a day or a week as diphtheria and other infectious diseases are cured. Bacteriologists may be on the threshold of the prison in which is locked the subtle secret of a tuberculosis serum but they can not liberate it yet. There are a few more doors to demolish, a few more locks to pick before they can produce this product and make its application practical; but the day will come, though it may be fifty or a hundred years hence, when they will set this agent free and then this dread-disease—this great white plague which yearly decimates our population by the thousands and causes untold misery and suffering—will cease its ravages and disappear as easily as small-pox has vanished under the influence of vaccination. Until that time comes we must face present conditions bravely and vigorously contend to overcome them. The more successfully we fulfil this task the more sincerely will posterity venerate this generation of its progenitors. — *New York State Journal of Medicine*, October 1909.

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## Acknowledgments.

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THE  
CALCUTTA JOURNAL  
OF  
MEDICINE

Vol. xxix.]

February 1910.

[No. 2.

A PATHOGENETIC AND CLINICAL STUDY OF  
SOME OF THE CALCIUM SALTS.

By EDWIN A. NEATBY, M.D.

It is not a little remarkable that the three great polychrest and anti-psoric remedies, *Sulphur*, *Lycopodium*, and *Calcium*, have practically no toxicology. I say practically none, because *Sulphur* presents one or two exceptions to this statement—exceptions more apparent than real. *Lycopodium* certainly has never been accused of poisoning any one, and most of the salts of *Calcium* are unirritating and not readily absorbed from the stomach. In that mine of wealth of the student of drug action—the *Cyclopædia of Drug Pathogenesis*—there are no records of exact experimentation, either on man or the lower animals. So it comes about that until quite recently all our knowledge of these drugs comes firstly from the accumulated empiricism of ages, and secondly and chiefly from the monumental labours of Hahnemann and some few of his colleagues. The merest beginner in Homœopathy knows how invaluable are these remedies, which thus become most triumphant proofs of the value and reliability not only of *similia similibus*, but of the method of “proving” drugs in various and varying strengths on the healthy (and even sometimes on the unhealthy) human subject.

Restricting ourselves now to lime and some lime salts, we find that of late years efforts have been made to fix by exact experi-

mentation the sphere of *Calcium*. Extended pharmacological knowledge has been acquired and has had its counterpart even in the orthodox school in extended therapeutic usage. The records of the pharmacologist in the case of *Calcium* have a twofold interest for us. In the first place they very largely confirm the usages already adopted by our school and in the second place they do very little more. There is still another point which impresses me; it may not seem of much importance to some of you. The results of modern experimentation seem to me to afford an *explanation* of some of the curative effects. We have gone on so long making use of homœopathic indications and getting good results without understanding how they are brought about, that we are perhaps a little too ready to feel that the explanation does not matter. For those of us whose confidence is settled and success assured it may not matter, but for the spread of the truth we so greatly value I cannot help feeling that every new fact which will help to explain to the inquirer groping after the truth the mode of action of a remedy, and to demonstrate the sweet reasonableness of the law of similars, is a great and important gain.

Allow me first to outline very briefly the salient points with respect to the physiology, pharmacology, and orthodox therapeutics of *Calcium* and some of its salts. First as to physiology. *Calcium* is present in the tissues of the body more extensively than is, at first sight, apparent. Besides forming, as phosphate, the solid inorganic framework of the bones and teeth, it is found in more or less intimate combination with proteids in all the soft tissues, the blood, the bile, and other secretions. Dixon says "it is a necessary constituent of all protoplasm." Moreover, the coagulation of the blood and of milk require the presence of *Calcium*. Certain fish, tadpoles, tubifex, and cilia, which would die in pure distilled water or solution of *Sodium chloride*, can be kept alive if a trace of *Calcium* and *Potassium chloride* be added. "Physiologically, one of the most important effects of *Calcium* is its action on the heart. Small doses stimulate, and large doses may induce hypertrophy. In health the arteries contain

notable quantities of *Calcium*, and this is increased when from intestinal or renal disease *Calcium* is imperfectly excreted" (Dixon). Second, as regards pharmacology. When soluble lime salts are introduced into the circulation they have a specific effect on voluntary, cardiac, and non-striped muscle; the heart's contraction is increased and prolonged, and relaxation is retarded; the vessels are constricted and the blood pressure is raised. At the same time the coagulability of the blood is markedly enhanced. Very large doses injected into the circulation produce profound depression of the central nervous system, and large medicinal doses used for some of the spasmodic neuroses cause an aggravation instead of a sedative effect. There are no recorded facts, so far as I know, of its effects on the blood. It is useful clinically in some of the secondary anæmias, and I have seen marked aggravation of the anæmia, and breathlessness occur when it was given (not by myself) in doses of 30 grs. daily or more. In one girl who came to me, intraocular hæmorrhage occurred while such doses were being taken, and she was nearly blind for many weeks. The blood became absorbed under the use of *Sulphur*, and the sight gradually returned.

While we all have a fairly clear idea of the therapeutic sphere of *Calcarea*, I have not found it easy to draw up a clear presentment of the part played by lime in the animal economy and of the definite pathogenetic basis for our therapeutic use of it.

The drug picture is made up of elements or scenes derived from various sources. First, there are the effects of *Calcium* starvation so called, and these effects are of course best seen in the young subject. In the adult deprivation of lime salts produces but trifling results. In the growing subject it has an injurious influence on the growth of bone—in birds the bones become thin and brittle, in mammals but little bone is developed—but the quality of that little does not depart greatly from the normal. This condition has been compared to rickets, but in rickets the quantity of bone formed is not lessened,



but its quality is impaired and lime deficient. In rickets the soft tissues contain as much lime as they should contain.

There is as far as I know no especial evidence to show whether or not the other symptoms of rickets—the local sweating, the disturbed sleep and digestion, and the tenderness of the limbs—are produced by the deprivation of lime salts. But we have abundant evidence that *Calcareæ* will do good in this condition, and we reason backwards and say it probably also produces it. It is not at all clear that rickets is due to a deprivation of lime salts—it may be due to an excess of lime salts. But then it is highly probable that the effects of excess and deprivation may ultimately be the same. In other words, over-doses of lime salts may produce surfeiting, and the absorptive powers, over-stimulated, may give out, and finally, diminished absorption or lime starvation may occur. However this may be, we know that either the presence or absence of lime is associated with bone changes, and we assume that the other rickety conditions are also.

We say then, that *Calcareæ* produces (and cures) rickets—or at least that it produces a condition closely resembling rickets and (in many cases) cures real rickets.

Next we say that cretinism is similarly associated with an excess or a deficiency of salts, and we assume that that association is causative by the same process of backward reasoning, viz., because many mild cases of cretinism, or its component parts, are ameliorated by the administration of lime in high potency. So we add these to the drug picture of *Calcareæ*—the bone changes, the hebetude and retarded growth and intelligence, the coarse skin and features, enlarged thyroid and tachycardia.

The source of the use of lime salts in tuberculous conditions is not so obvious. It is, of course, not tuberculosis *per se* which *Calcareæ*, shall I say, counterfeits, but the state of body weak in anti-tuberculous immunisation. The use is probably older than Homœopathy; our warrant for its use is Hahnemann's pathogenesis. It is true that most of it was based on obser-

vations made on the sick. Some of them may be drug aggravations and some genuine symptoms due to the drug. The long and oft-proved reliability of Hahnemann's pathogenesis shows what a genius in observation he was, for his method is one which few lesser minds can safely follow.

At this point I may interpose a few cases supplied to me by Dr. Tyler illustrating the use of *Calcium* in tuberculous or rickety subjects.

R. P. (9 months).

May 20, 1909.—Eyes have watered since birth, gets yellow matter in corners, glued in the morning. No teeth. Breast fed. Fontanelle nearly closed; slight beading of ribs; wrists a little bulgy. Is well. Bowels open. Chalky face. *Calc. c. c. m.*, one dose.

June 17th.—Eyes very much better, no matter in them now. Two teeth. Yesterday a screaming fit as if in pain, then all right. Screamed again this morning. *Cham.* 200, one dose and p. r. n. Case not seen since; was to come again, or let me know if not better.

ROBERT F. (8 years.)

June 22, 1909.—Pleurisy a year ago never well since. Very hot, tired; gets bronchitis. Dyspnoea. Pain on respiration right side of chest. Losing flesh. Head sweats. Eyes heavy. Hands clammy and cold.

*Exam.*: Loud rhonchi. Pain left chest—(?) some consolidation? Temp. 99.8. *Calc. c.* 200, discs iij, one dose.

July 13th.—Looks very much better. Pain gone. No medicine.

MAUD B. (10 years old).

March 23, 1909.—Bad cough since fourteen days before Christmas. Directly she sleeps sweats—face, chest, &c. Nightgown damp. Dry cough, no phlegm: "Coughs as soon as she goes into bedroom (not by day). Coughs as soon as she goes to sleep;" cough does not wake her. Gets flushed. Phthisis mother's side.

*Exam.* Terrible teeth, ill-grown, decayed, and blackened. Thinf. Rather anæmic. Chest, nil. Cor., nil. *Calc. c.* 30, discs ij. *ter* weekly.

*April 6th.*—Better. No sweat since Friday. Less cough. Headache. *Calc. g.* 200, one dose.

*May 4th.*—Very much better. Cough gone. Sweating stopped. Head well. No medicine.

*June 15th.*—Two boils, otherwise quite well. "Better than she has ever been." No night-sweats. No cough. Her teachers say: "Child is much better." No more medicine. Not seen again.

With regard to the relationship between *Calcareæ* and tubercle I have made a small investigation which I will mention to you, though it is not of much value by itself. I tested my index to tubercle prior to taking *Calc. c.*, and found it 0.93. After a dose of 10m of *Calc. c.* 30 I tested it for four days and found the average .927. So I conclude the effect was nil in this respect. A colleague took grs. 5 of *Calc. lact.* four times a day, and found first a slight drop, then a rise, then a considerable drop. Before, .9; after taking *Calc. lact.* .83, 1.0, .72.

More important is an observation made by Dr. Watters, Professor of Pathology at the Boston University School of Medicine, and recorded in a paper he kindly sent me. As you know, our *Hepar sulphuris* is a calcium and not a potassium salt. Of it he says, it "possesses a reputation of being able to hasten suppuration when taken in the lower potencies. It seemed to me, accordingly, that it did so by reducing the opsonic index, and was so tested. The result is that I have been able to find repeatedly a fall in the staphylococcus index following the use of a single dose of *Hepar* 1x, or after several doses of 2x, 3x, and 6x."

I have referred before to the effects which exact experimentation has shown that *Calcium* salts produce, and these support and explain the use to which *Calcium* is put by us in many conditions. Its effects on the blood and circulation bear out

its use in many circulatory and hæmic conditions. My observations lead me to think that both the primary and secondary drug effects may be utilised—possibly in the same patient at different times, but I think different doses are required, and I believe that one cannot consistently mix up the primary and secondary symptoms as indications for the drug. For the group of symptoms associated with the primary effects of lime (and other drugs) I believe low dilution or small doses of the crude substance act more promptly and more satisfactorily than an infinitesimal, but of course the dose must fall short of aggravations. Let me give an illustration. For menstruation, which is, after a few days' interval, brought back by excitement, and which is due to an increase in the blood pressure, I would give it quite low—3x of the phosphate or 1x of the lactate. For long continued menorrhagia, with a low-tensioned pulse, resulting anæmia, moist though cold skin, I should give it high, in infrequent doses. It is not by any means easy to settle which are primary and which are secondary symptoms.

There is great deal to be said in favour of Hahnemann's instructions to his disciples when they inquired of him the reasons for giving a medicine in a certain case. "Study the materia medica," he said. This is delightfully easy for the teacher, but rather hard on the student. It is, of course, true that any drug may do good in any case if only it is indicated. But it often saves a lot of time to know that in certain cases the remedy will often be found in a given group of drugs.

While dealing with the nervous system I may remind you of the ancient use of lime salts in epilepsy, dating from long before Homœopathy became systematised. They were administered in the shape of dried and crushed bone, especially the human skull—probably on a crude "doctrine of signatures"—or organo-therapy. Modern cases of cure, such as the following, are recorded in the *British Journal of Homœopathy*: A woman of 27, after the suppression of a rash had fits regularly every third or sixth night characterised by loss of consciousness, rigidity, violent cries, pale face, and cold sweat; after the fits

vertigo and throbbing headache. She suffered from scanty and painful menstruation, drawing in the forearm, relieved by cold and very ready perspiration. *Calc. c.* 30 cured. We are not told how frequently it was given.

Again, in a girl of 5, the fits consisted of rigidity of arms and legs, distortion of the eyes, bluish-red face, foaming at the mouth, and loss of speech. After the fits, sleep with anxious restlessness and cries on awaking. The fits were excited by the slightest vexation. Her general symptoms were fondness for milk, uneasy sleep, much stretching and straining. *Calc. c.* 30, fortnightly doses, cured.

The first case hardly sounds like epilepsy, nor do many of the old published cases. The second may possibly have been true epilepsy. In recent homœopathic literature there are very few cases published. It is not without interest to notice that in 1907 its use was revived in allopathic hands. Silvestri, an Italian writer, states that in cases of epilepsy and eclampsia there is often a deficiency of lime salts and feeble coagulability of the blood. This is his reason for giving *Calcium*, and he says he gets capital results, especially in young people. In other convulsive neuroses *Calcium chloride* has been used, and with excellent effects, in tetany, spasm of glottis, and convulsions. Doses of gr.  $1\frac{1}{2}$  upwards were used with this significant caution: "If given in excessive doses the calming effect is replaced by an inverse action"—in short, by medicinal aggravation. The theory may or may not be correct—the practice is probably good in at least a proportion of such cases. Blair Bell, of Liverpool, has written on the great importance of *Calcium* salts in health and disease, and has devised an ingenious method of estimating the *Calcium* content of the blood, but it is too intricate to detail here.

I should like now to direct your attention very briefly to the parallel symptomatology of *Calcarea* and that protean malady neurasthenia, many cases of which came under my observation in women with gynecological ailments. I have placed in parallel columns the symptoms of the disease drawn from Allbutt or

other authors, and of the drug, taken chiefly from Hering's *Guiding Symptoms*.

## DISEASE.

1. Dull, diffused ache in upper  
  { dorsal or across pelvis.
2. Acute pain and tenderness,  
  especially at certain spots  
  (back).
3. The coccyx is the seat of acute  
  pain.
4. The limbs "die" or "go to sleep"  
  when overlaid or otherwise  
  pressed upon.
5. Carotid pulsation.
6. Tongue strange or numb sensa-  
  tion.
7. As if legs were standing in cold  
  water.
8. Weariness of legs.
9. Weak and good for nothing in  
  body.
10. Gait slow, feeble, creeping.
11. Pupils sluggish and dilated.
12. Shrinks from light.
13. Loss of memory.
14. Brain weariness.
15. Head feels empty or full, as if  
  a heavy weight on it.
16. Vertigo apt to occur on rising,  
  stooping, or rapid change of  
  position.
17. Heart's action rapid.

## DRUG.

1. Pain between shoulders and  
  lower part of back; draw-  
  ing pain between shoulders.
2. Stitches very severe in various  
  parts of back.
3. Drawing, tearing, and pinching  
  in coccyx.
4. Lifeless, "gone asleep" condition  
  of muscles of thigh. Legs  
  go to sleep in evening when  
  sitting.
5. Carotid throbbing.
6. Rough, bristling sensation of  
  tongue.
7. "Cold, damp feet." Sensation  
  in feet and legs as if she had  
  on cold, damp stockings.  
  Icy coldness of legs.
8. Great weariness and weakness  
  of all limbs, especially feet.
9. Weak; no animation.
10. Loss of power in walking.
11. Pupils much dilated.
12. Photophobia.
13. Want of memory and confusion  
  in head.
14. Headache depending upon  
  brain-fag.
15. Dulness of head, as if too full.
16. Vertigo on turning head sud-  
  denly, due to weak heart;  
  worse early morning on  
  rising, as though one would  
  fall unconscious.
17. Pulse accelerated.

DISEASE.	DRUG.
18. Heart : too conscious of its action.	18. Pulse, audibly beating * of heart.
19. Face and neck flush.	19. Frequent flushes.
20. Local syncope.	20. Middle fingers become dead, white, cold and senseless.
21. Great instability of the vascular compensation for gravity.	21. "Staggering on getting up."
22. Palpitation.	22. "Palpitation."
23. Irregularity or intermittence.	23. Unequal pulse.
24. Arterial blood pressure nearly always below the mean.	24. Secondary action of <i>Calcium</i> salts, lowered blood pressure.
25. Cannot bear mental or physical strain.	25. Sustained effort impossible.

A girl, about 21, came to me after having had a bad throat and rheumatic pains. It was called influenza. Her chief distress was tachycardia, much aggravated by ascending and even by quickly crossing the room. She had bad chilblains, cold hands and feet, and sleeplessness. Palpitation, worse at night, kept her awake; headache on slightest mental exertion. I made her lead a quiet life, and gave *Calc. lact.*, gr.  $\frac{1}{2}$ , 4 *tis hor.* Her limbs got warmer, and the chilblains quickly improved. Later on I put her on *Calc. c.* 12 twice a week, with a placebo. She made a good recovery.

Her mother was also rapidly cured of bad chilblains by *Calcarea lact.* in doses of 3 gr. *bis die*.

I do not often see a skin case, and there are very few I could name, but I can recollect one patient about two years ago who consulted me for severe urticaria, of which she often had bad and long attacks. I felt rather confident I could cure her with *Apis*, but I didn't. *Calc. carb.* 30 was no better, but *Calc. lact.*, grs. 5 every four hours, was quickly followed by an ending of that attack. I cannot say whether the remedy was homœopathic to the case—and the patient did not ask!

Quite recently one of my gynæcological patients came to me with a condition I should like to call lichen urticatus. She could not trace a cause unless it were a recent gastro-intestinal

attack. I call it lichen urticatus because it was made up of a mixture of itching papules, running together in many places and forming patches with raised edges resembling nettlerash. It looked like poisoning by handling *Rhus* or *Primula*, but it wasn't. She had taken *Rhus*, so I gave her *Primula*. It was no better, and was spreading from the trunk to the neck and face, and down to the wrists, so as to be visible. I gave her *Calc. lactata* gr. iij every two hours, and this was followed by very acute swelling of the forearms—so that itching was forgotten in pain, and it looked as if a serious cellulitis were threatening. I gave her hot fomentations and *Urtica urens*  $\phi$ , which was followed by rapid recovery. The point of the case, of course, is not the recovery but the apparent aggravation by the *Calc. lact.*

One other sphere I should like to direct attention to—the gynæcological. Here or elsewhere the drug will do all we have any right to expect it to do. The usual local indications for it, in my experience, are as follows: Menstruation is premature and profuse, and the flow is bright—i.e., it may have one or all of these features; the prematurity is said to be the important point. Still more important, when it is present—which is only occasionally—is the indication, “recurrence after cessation,” the recurrences being brought about by emotion or excitement. This I believe to be due to the emotion causing an increase of blood pressure. If the blood is thin and watery—I refer to both the circulating and the menstrual blood—this will be an additional indication. This is of interest, in view of the recently ascertained fact that moderate doses of lime salts increase the coagulability of the blood, especially when with that fact is coupled the observation I have made that excessive doses cause anæmia, and possibly encourage hæmorrhage. I have also noticed that cases of menorrhagia—e.g., in fibroids treated by lime salts—while better during the administration of the drug, are worse after a time than before the commencement. This does not happen after *Calcium* in potencies.

In cases of neurasthenia menstruation is one of those circumstances which, like an evening party or a public meeting, makes



prominent all the patient's weak points. The headache patient will get her favourite headache; the backache of another person, or the palpitation, or the prostration will be induced without further excuse than the incidence of the monthly flow. The exercise of the sexual function may produce similar weakness and exhaustion, while the sexual instinct is nevertheless increased, and in women possibly perverted to the extent of nymphomania. These conditions all may require *Calcarea*, which is eminently homœopathic thereto, being very commonly associated with many of the general circulatory and constitutional symptoms of *Calcarea*; so may leucorrhœa or xanthorrhœa of an acrid nature causing excoriation of itching and favouring warty growths of the vulva and polypi of the uterus. It is interesting in this connection to know that recent research tends to show that these conditions are associated with increased excretion of lime salts, and consequently with diminished *Calcium* in the blood.

I have only time now for one or two cases showing the action of *Calcarea* in some of these maladies. In the very early days of my practice—more than a quarter of a century ago—a case made a great impression on my mind. A stout woman, æt. about 33, of flabby fibre, was under my care for indigestion, menorrhagia, leucorrhœa, and cold extremities. She had improved to some extent, but the pelvic symptoms were not much better. One day she sent to me because her period, only a few days over, had recurred profusely after the receipt of some exciting news. This drew my attention to *Calcarea*, of which I gave a few doses in the 200th potency. This seemed to be the turning-point in this lady's history, for she never looked back, and attained a better state of health than she had had for years.

Ella M., æt. 33, whom I saw in October, 1895, had a dilated Fallopian tube, probably post-gonorrhœal hydrosalpinx. She had menorrhagia, recurring too early, blood thin, with stringy mucus, lumbo-sacral pain, "cutting" in character; irritating yellow discharge < before the period; poor circulation, and chilblains every winter; depression of spirits, claustrophobia, and fatigue from slight exertion; all < in damp, cold weather.

I gave her *Calc. c.* 6 (t.d.s.), followed at first by an aggravation, and later by permanent improvement.

Another case was one of a woman, æt. 45, with dysmenia and menorrhagia, due to a submucous fibroid in the anterior wall of the uterus; she had had the uterus dilated, swabbed, and packed with gauze, with relief to pain but not to the bleeding. *Calc. iod.* 6x was given with much benefit.

One other case of a girl, æt. 20, with the same kind of menorrhagia and early recurrence, with pain in hypogastrium at m.p. She was short of breath, though not anæmic; had cold hands and feet; was always tired—legs shaking on going upstairs or even on standing; mind over-active the early part of the night and heavy sleep in morning; easily perspired on exertion. She had *Calc. phosphid* 6x. and subsequently *Calc. carb* 12, followed by great general improvement in four months.

Gentlemen, I will not weary you or myself further. I am fully conscious that this paper is unworthy of the occasion, but I crave your indulgence.

In conclusion, may I remind you that the object of the paper was not to reaffirm the excellent symptom-lists of the pathogeneses, but to try—very unsuccessfully it has been done, it seems to me—to show the source of those pathogeneses, and furthermore that they and the resulting therapeutic practice are largely supported by modern knowledge and experimentation.—*The Homœopathic World*, December 1, 1909.

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## EDITOR'S NOTES.

**A New Test for Albumin in Urine.**

Five parts of urine, diluted with ten or fifteen parts of water, is carefully floated on three parts of potassium iodide solution and two drops of acetic acid, 36 per cent., in a test-tube. In presence of albumin, a white ring is formed at the zone of contact; immediately if as much as 0.01 or 0.02 per cent. is present, and in two minutes with as little as 0.005 per cent.—*The British Homœopathic Review*, December, 1909.

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**Tests for Di-acetic Acid in the Urine.**

It must not be forgotten that salicylates and the salicylic group of drugs (including aspirin and mesotan), as well as the antipyrine group, cause the urine to give a deep reddish-brown or reddish-purple coloration on the addition of ferric chloride solution. This may be mistaken for the diacetic acid reaction. But in the reaction produced by di-acetic acid the colour disappears on boiling, and can be dissolved out by ether. In both these respects it differs from that due to salicylates and antipyrine.—*The British Homœopathic Review*, December, 1909.

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**"Science" says:**

"The number of students in the universities of the German Empire has this summer reached 51,700, an increase of about 3,000 over last winter and of 4,000 over the summer of 1908. There has been a large increase in the faculties of medicine and philosophy, and a decrease in the faculty of law."

**DÉMONSTRABLE DILUTIONS.**—It is reported that Berthelo estimates that one gram of musk in 100,000,000,000,000 c. c. of air is perfectly perceptible to the sense of smell, and that others claim it to be demonstrable in still greater dilution. This corresponds to the homœopathic 18x and is, we believe, the most attenuated substance yet known that is capable of material recognition.—*The New England Medical Gazette*, November, 1909.

### A Tuberculosis City.

A block of buildings is being erected in New York City, being intended for occupancy by families having one or more members afflicted with tuberculosis. The most recent development is the proposed formation of, a tuberculosis city near Phoenix, Arizona. The idea is to erect several series of cottages about central administration buildings, each group consisting of about 100 cottages. Accommodations are to be provided for the unattended patient, and also for the consumptive accompanied by his family. The cottages will be equipped for light house-keeping. In making this provision for consumptives the projectors of the enterprise have in mind the needs of the large number who arrive in the Southwest annually with little or no means of support; although at the same time, everything possible will be done to discourage the immigration of patients.—*The North American Journal of Homœopathy*, December, 1909.

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### The Death of Dr. Ludwig Mond, F.R.S.

The death of Dr. Ludwig Mond, F.R.S., on Dec. 11th last, removes a giant amongst the industrial chemists of the country. His chemical researches have met with enormous practical applications, none of which, however, can be compared for commercial importance with his discovery, which was the outcome of both his chemical and engineering knowledge, of the use of ammonia and carbonic acid gas in the conversion of common salt into carbonate of soda. He also observed the formation of those curious metallo-gases known as carbonyls, of which iron and nickel carbonyl are the most familiar examples. They are gaseous compounds of the metals with carbonic oxide, and the principle is now carried into effect in recovering nickel from its ore and for the purposes of purification. Dr. Ludwig Mond worked hard to encourage research, especially amongst young chemists with limited means at their disposal. He founded the Davy-Faraday Laboratory of the Royal Institution and having fitted it with all the appliances necessary for modern chemical research gave it an ample endowment. The investment has proved a fruitful one for chemical science, for some excellent and valuable original work has been

done in the Davy-Faraday Laboratory. Dr. Ludwig Mond's name will go down to posterity as that of a man who did much to show the power and importance of research and who gave abundantly by various ways and means the opportunity to others of seeking out new facts. Can a man of science seek a better verdict?—The *Lancet*, December 18, 1909.

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### The Pharmacology of Ergot.

The great therapeutic interest connected with ergot, and the constantly changing opinions as to its active constituents, render it most desirable occasionally to review the progress that has been made. The most recent work on the subject is critically reviewed in the *Journal of Pharmacology and Experimental Therapeutics* for August by Mr. W. H. Cronyn and Mr. V. E. Henderson of the Pharmacological Laboratory of the University of Toronto. Summarising their own experiences and those of other workers, they conclude that most galenical preparations of ergot contain considerable amounts of the active principles, but do not show any great or marked action when given by the mouth. They consider that the doses usually recommended for these preparations are much too small. They point out that when injected intravenously, a fall in blood pressure always precedes the rise, except after the administration of ergotoxin. Quantitatively, the galenical preparations of ergot show great variations in pharmacological action. They conclude that ergotoxin is a highly active alkaloid, having the properties of ergot most desired in medicine. It brings about a long enduring contraction of the walls of the arterioles, and increases the movements of the uterus. Its action is feeble when given by the mouth, but it is more marked in subcutaneous injections, and much more so when given intravenously. The last-named method is recommended in cases where a rapid and certain action is desired, either in shock or in post-partum hæmorrhage.—The *Lancet*, November 6, 1909.

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### Preventive measures against Mosquitoes.

Malaria is endemic in most tropical and subtropical regions where precautions are not taken against mosquitoes, and the story of a recent application of medical entomology to practical cases is an instructive chapter in the history of sanitation. It is now a matter of common knowledge that measures directed mainly against the breeding places of the insects have proved successful in various parts of the world. An experiment on a comparatively small scale, but no less effective, has recently been made by Major P. G. Elgood, director of the Police School in Cairo, and was described by him in the *Cairo Scientific Journal* for July last. In the autumn of 1906 this school occupied an old place containing from 160 to 200 comparatively small rooms, together with an average of one cess-pit to each two rooms. Mosquitoes abounded and were so troublesome that Major Elgood, who had already had experience of them in Burma and elsewhere, could not sit in his quarters after sunset, and the cadets were unable to obtain sleep. The public health department then came to the rescue, and he states that when its preventive measures had been in operation for a few weeks the place seemed to be more free from mosquitoes than any flat or club which he was in the habit of visiting at the time. In the summer of 1908 the school moved into new quarters at Abbassia, where it was soon found that the desert isolation of the locality was no protection against mosquitoes. Major Elgood, however, guided by the public health department, dealt with them by a simple method. Once a week a third of a teacupful of crude petroleum oil was poured down each of the 182 latrines, sinks, and other possible mosquito-breeding places which exist in the school. Twice a week each receptacle of water was emptied and filled. The result was that on the occasion of a visit made by an inspector of the public health department no mosquitoes could be found in the school, although all latrines and other likely places were searched by him. No special men were in charge of the work and the cost was estimated at about 10s. a month. Major Elgood draws particular attention to the simplicity and cheapness of the preventive measures which satisfied him so well. He also mentions, incidentally and without comment that the prevalence of dengue in the school declined very much after the removal from Cairo to Abbassia.—*The Lancet*, November 6, 1909.

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### The Increase of Population in England and Wales.

There is something apparently paradoxical in the statistical fact that in spite of the marked and steady decline of the birth-rate in England and Wales, the actual number of births continues to increase. The obvious explanation of this fact is, however, that the excess of births over death in this country is still causing a steady and rapid increase of population, notwithstanding the decline of the birth-rate. Moreover, the decline in the birth-rate has been accompanied by a marked and steady decline in the death-rate, which has to some extent counterbalanced the effect of the reduced birth-rate upon the increase of population. During the five years 1871-75 the mean annual birth-rate in England and Wales reached its maximum, and was equal to 35.5 per 1000; the mean death-rate during the same period was 22.0 per 1000. Thus the annual natural increase of population during this quinquennium was equal to 13.5 per 1000. During the most recent completed quinquennium, 1901-05, the annual birth-rate had fallen to 28.1 and the death-rate to 16.0 per 1000. Thus the mean annual natural increase of population, which had been equal to 13.5 per 1000 in 1871-75, did not fall below 12.1 per 1000 during the five years 1901-05. While, however, the rate of natural increase of population, notwithstanding the marked decline of the death-rate showed a distinct decrease during the 30 years referred to, the annual number of registered births continued to increase, owing to the constant additions to the population by excess of births over deaths. During the five years 1871-75, with a birth-rate of 35.5 per 1000, the average annual number of births registered in England and Wales did not exceed 831,735; whereas in the five years 1901-05, although the birth-rate had fallen to 28.1 per 1000, the average annual number of registered births had increased to 938,654. Similarly, notwithstanding the decline during the 30 years of 1.4 per 1000 in the annual rate of natural increase of population, the actual numbers annually added to the population, which averaged 317,185 during the five years 1871-75 had increased to 404,341 during the last completed quinquennium, 1901-05. Thus while both the birth-rate and the rate of natural increase of population had distinctly and continuously declined during the 30 years the number of registered births and the amount of natural increase of population continued steadily to increase. It is interesting to note that while the mean rate of natural increase of population, by excess of births over deaths, was equal to 12.1 per 1000 during

the five years 1901-05 in England and Wales, it was during the same period equal to 14.3 in the German Empire, 14.2 in Denmark, 14.1 in Norway, 10.7 in Italy and in Belgium, 10.6 in Sweden, 10.4 in Switzerland, 9.2 in Spain, and only 1.6 per 1000 in France. The population of England and Wales is therefore still increasing, by excess of births over deaths, at a greater rate than that of most of the Continental States.—*The Lancet*, December 4, 1909.

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### Deaths from wild Animals and Snakes in India.

It is a remarkable fact that in spite of the opening out of the country by railways and roads and the clearing of jungle tracts the number of persons killed by wild animals in British India does not show any decrease; in fact, last year the figures rose to 2166, an actual increase of 200 in comparison with the deaths in 1907. In Bengal, tigers killed 100 more persons, while in the Central Provinces and Berar the increase was 64. In the Chanda district one tiger alone killed 19 people before it was shot, while panthers and bears accounted for 95—practically double the total of the preceding year. In the United Provinces the mortality was 194 against 159. This increase was due to the ravages of leopards and wolves in the Kumaon and Fyzabad divisions respectively. Leopards seem to abound in Kumaon, and one particularly given to man-eating was still at large at the close of the year, though a reward of Rs. 500 had been offered for its extinction. In Bahraich wolves have become so dangerous that special measures have been taken for their extermination. The number of cattle killed was 87,697—a decrease of some 1200. In the United Provinces, however, there was a remarkable rise; and in the Almor district this is said to have been due to the wholesale destruction of game, which has resulted in a serious diminution of the natural food-supply of tigers and leopards. It may be noted that in the Kumaon district wild dogs do great mischief, though the Forest Department has entered upon a campaign against them. Evidently there is much work still for the sportsman in various parts of India and there is no necessity to accept any plea for the preservation of the tiger, leopard, or wolf. As to the deaths from snake-bite, the decrease was very satisfactory, the numbers falling from 21,419 to 19,738. This total was the lowest since 1897, and every province shared in the decrease. The official report states that the success of the



Lauder Brunton treatment is on the whole encouraging, although usual uncertainty as to the identification of the snake in the majority of cases still continues. The Commissioner of Agra reports that the villagers are afraid of the lancets, while the Magistrate of Shajahanpur states that there is a general complaint that the lancets are not deep enough to make proper incisions where the skin is hard. The results generally reported, however, are such that Government consider they justify further efforts being made to popularise the treatment. It is to be hoped that these will be made, for the application of the lancet and permanganate of potash is simple in the extreme, and the most ignorant person can use the method. It is interesting to note that in Burma the lancets were used with some success in cases of cattle bitten by snakes, and the civil veterinary department might report whether this kind of treatment is really efficacious.—The *Lancet*, December 4, 1909.

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### Marriage-Rate.

The number of marriages registered in England and Wales during 1908 was 264,940, which was equal to a rate of 1.49 persons married per 1,000 of the population, estimated at 35,348,780 persons in the middle of the year. Comparing the marriage-rate in 1908 with that in 1876-80, after correction for variations in the proportion to total population and in the age constitution of the marriageable population, there appears to be a decline of 1.54 per cent. The mean age at marriage continues to rise, almost equally in the two sexes; the proportion of church marriages declined from 842 per 1,000 in 1851-55 to 606 per 1,000 in 1908, while civil marriages rose from 46 to 204 per 1,000, and Nonconformist marriages from 62 to 132 per 1,000. The *British Medical Journal*, December 18, 1909.

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### The Death Penalty.

As the outcome of a discussion began at the Medical Congress held at Budapest last autumn, an international inquiry has been set on foot as to the death penalty. A circular containing the following questions is being sent round to members of the medical profession :

1. Do you approve of the death penalty from the medical point of view, and in particular do you think that the responsibility of the criminal can in all cases be determined with certainty ?

2. Do you know of cases in which a *post mortem* examination has revealed the existence of gross lesions in the brain of the executed criminal ?

3. Give other reasons for or against the death penalty from the medical point of view.

4. Should a doctor attend at an execution in order to verify the death of the condemned person ?

5. Do you approve of the proposal which has been made that the next International Medical Congress should record its opinion against the death penalty and against the propriety of a doctor witnessing the execution ?

6. Other remarks.

Replies should be addressed to Herr Mikolajski, Sniadeckich-strasse 6 Lvow, Austria.—The *British Medical Journal*, December 11, 1909.

### The Prevalence of Plague in India.

The plague returns for the week ending Sept. 25th show the following deaths. Bombay Presidency reported 938, Madras 155, Bengal 43, the United Provinces 418, the Punjab 181, Burma 18, the Central Provinces 963, Mysore 243, Rajputana 402, and Central India 219. The mortality in the Central Provinces is mainly in Nagpur city, where 656 deaths occurred during the week.

#### *The Health of Bengal.*

Indian sanitation is generally somewhat primitive, and even the most advanced places are behind the times according to Western ideas. But it seems to be a fact in Bengal, at any rate, that though process in urban sanitation is slow it is quite perceptible. Exclud-

ing the mortality from plague, the figures for the last seven years show that the public health in the towns has always been better in the rural areas, and the difference in favour of the urban death-rate has been increasingly marked during the last four years. The year 1908 was unhealthy, especially, in the early months, the cholera mortality, 268,908, being the highest on record. On the other hand, to the destruction of mosquito larvæ during the abnormally dry months\*preceding the monsoon is ascribed the decreased severity of fever. At the same time the Sanitary Commissioner does not appear to hold to the mosquito theory in its entirety. The districts most affected with "fever" can none of them be described as water-logged, and the Sanitary Commissioner apprehends that "the deficiency in the rainfall necessary to scour away the accumulated surface impurities affected prejudicially the health of these tracts," which is another way of saying that the prevalence of fever can be attributed to other causes than the anopheles mosquito. Plague was much less prevalent than in previous years, but it is reported that popular prejudice against scientific preventive measures is as stubborn as ever. Evacuation of infected dwellings is practically the only preventive measure at all in favour. Rat destruction was carried on by organised gangs in most of the districts of Bihar, though the use of poison for this purpose was objected to by the people, particularly in Shahabad. The expenditure by municipalities upon sanitary improvements increases slowly, but it is far below what it should be, and there is a tendency, sternly deprecated by the Lieutenant-Governor, to look to Government for substantial grants for sanitary projects. The problem is generally one of funds, and until more ample means are available the progress of sanitation in Indian towns must necessarily be slow.

#### *Malarial Fevers in Bengal.*

Bengal was far more fortunate than the Punjab, as the early withdrawal of the monsoon has resulted in far less malaria than usual. In the jails, where the prophylactic use of quinine is kept up, the admissions for fever declined by over 1000, while the deaths were only 11. The making up of quinine in small packets for sale among the people has now been concentrated in the jail for juveniles at Alipore, and 30 boys are employed in this work. In order to make the use of the drug more popular among the public in malarial districts it is being put up in tablet form. The necessary machinery has been procured and the manufacture of the tablets is proceeding.

Special arrangements have been made to stock these in large quantities, as well as 10-grain pice-packets; and the Inspector General of Prisons is confident of being able to meet any sudden demand when malaria appears in epidemic form. Over 4,000,000 pice-packets were made up and despatched to various post-offices during the past year, and operations henceforward will be on a still larger scale.

### *Ambulance Work in India.*

It would be satisfactory to hear that a generous response was being made to the appeal for further support on behalf of the St. John Ambulance Association in Bombay. The association has long carried on a quiet but useful work in the town and its apparatus and skilled ambulance parties have been freely placed at the disposal of the general public on occasions when there is a more than ordinary chance of accidents occurring. Four ambulances are now kept for general use, including two new wheeled ambulances at the head police office and Colaba police station respectively, the former having attached to it a trained squad of attendants. It is obvious that this service cannot be considered adequate for a city of the size of Bombay, and the association is endeavouring to place its work on a broader basis. It deserves a little coöperation both from the municipality, to whom it is appealing for funds, and from the public whose assistance it invites both by personal service in the trained corps and by subscriptions.

A centre of the St. John Ambulance Association for the Southern Punjab has just started work at Kasauli. It has been organised by Lieutenant-Colonel O. R. A. Julian, C.M.G., who is a specialist on ambulance matters, as he has acted as adjutant of the Royal Army Medical Corps Training School at Aldershot. The committee of the new centre is under the presidency of Major-General J. D. Pilcher, C.B., commanding the Sirhind Brigade. The vice-presidents are Colonel A. M. Crofts, C.I.E., P.M.O., Sirhind Brigade; Mr. R. Sykes, Deputy Commissioner; and Colonel H. Grey, C.S.I. The chairman is the Rev. A. H. Hildesley, M.A., principal of the Lawrence Military Asylum, who has long taken an interest in the work of the association, and has organised numerous ambulance classes for the boys under his control. Colonel D. Semple, R.A.M.C., the director of the Central Research Institute, is the vice-chairman, and the members include the Commandant of Kasauli and the Cantonment magistrates of Kasauli and Ambala and many

influential officers and civilians. Lieutenant-Colonel Julian acts as honorary secretary himself. With such a strong committee and energetic and experienced secretary there can be little doubt that the centre has a long career of usefulness before it.—*The Lancet*, November 6, 1910.

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### **An Early Ordinance against Spitting.**

Sir.—An early by-law prohibiting expectoration in public places is recorded in Book XVI of the *Annals* of Tacitus, chapter iv. The chapter in question describes the appearance of Nero on the public stage as a competitor in singing and elocution for the prizes to be awarded to the best performers. Having recited his poem, the auditory, delighted with the grotesque performance of their Emperor, called upon him for a specimen of all his accomplishments (but "omnia studia sua publicaret"). He thereupon stepped on to the stage, conforming to all the rules for the guitar-player, namely: "That though tired he should not sit down, that he should not wipe the sweat from his brow save by a fold of the cloak he wore, and that no excrement from the mouth or nose should be seen (Ne fessus resideret, no sudorem nisica, quam indutui gerebat, veste detergeret: ut nulla oris, aut narium excrementa viserenture)."—I am, etc.,—*The British Medical Journal*, December 25, 1909.

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### **Discovery of Tasmanian Skulls.**

Professor R. J. A. Berry, of Melbourne University, and Dr. A. W. D. Robertson have made a very remarkable and unexpected discovery of skulls belonging to native Tasmanians. Some 33 years ago "Lalla Rookh," the last of her race, died, and with her passed out of existence not only the most primitive civilisation but the most primitively constituted people that anthropologists have any knowledge of. Last year Sir William Turner made an inventory of all the remains known of this race and was able to compile a list of 79 skulls, by far the richest collection being in the museum of the Royal College of Surgeons of England. The many points of resemblance between the remarkable people who inhabited Europe in palæolithic times—two additional examples of which have been recently discovered in France and largely discussed in the popular press—and the native Tasmanians have made clear to anthropologists that much can be learned of the very earliest inhabitants of Europe by studying the native races of Australia. Hence the importance

of Professor Berry's success in collecting from various sources—former burial grounds, private collections, museums—42 additional Tasmanian skulls, all of which he has good reason to regard as authentic. The description of his collection will occupy some time but there can be no doubt that the publication of his investigations will provide a valuable welcome addition to our knowledge of a most interesting past race.—*The Lancet*, December 11, 1909.

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### Lead-Poisoning from a Soda-Water Fountain.

In the *Boston Medical and Surgical Journal* of November 4th Dr. A. L. Patch and Dr. E. W. Taylor have reported a case of lead-poisoning from an unusual source. A Russian Jew, aged 55 years, was admitted into hospital on August 22nd, 1903. His wife and one daughter were ill from lead-poisoning and another daughter had recovered from the disease. For the past two years the patient's health had been failing. Two months before admission he had an attack of severe colic with hæmaturia and became very constipated, and the pain continued. For a few days his mind appeared to be affected; he was forgetful and could not complete his sentences. On admission he was semiconscious and difficult to rouse. There was the lead line on the gums. The knee-jerks were normal and there was no evident paralysis. The skin was pasty and the mucous membranes were pale. The pulse was of low tension. Fine, moist râles were heard at the bases of the lungs. The ankles were slightly œdematous. The urine contained a trace of albumin and a few hyaline and fine granular casts. It was found that 18 months previously the patient bought a second-hand soda-water fountain. In April, 1903, the black-tin piping in the fountain became leaky and he substituted lead piping for it as this was less expensive. In May he began to feel weak and his power of lifting became weaker. In the following month he had crampy pains in the abdomen and limbs. His only drinking water was obtained from the soda-water fountain. Later wrist drop and atrophy of the supraspinati and of the muscles of the arms developed. Some of the atrophied muscles gave the reaction of degeneration. Under potassium iodide and galvanism he recovered. The soda-water in the fountain gave a marked black precipitate with hydrogen sulphide. Careful examination of the patient's house revealed no other source of lead poisoning.—*The Lancet*, December 11, 1909.

## CLINICAL RECORD.

## Foreign.

## CASES OF GRAPHITES.

By WALTER SANDS MILLS, A.B., M.D.

CASE 1. A woman, forty, with a nursing baby six months old. Patient was taken with facial erysipelas on December 10th. My first prescription was belladonna. On the 11th, I gave graphites. On the 12th, patient was so much better that she got up before my call. Recovery prompt and uneventful, although the baby was nursed right through.

CASE 2. Patient in the Metropolitan Hospital, aged twenty-four, confined December 17, 1901. The next day the temperature started up and we supposed we had an infection. Douches were used; and on the 22nd, patient was curetted. December 25th, the temperature was 105°. On the 26th, I found the patient with well marked facial erysipelas, both sides. All uterine treatment was at once stopped, and the patient given graphites. On the 27th, the face was still much swollen and both eyes closed. From this on, improvement began and the patient made an uneventful recovery. Beginning January 2nd, my successor gave rhus tox.

CASE 3. Colored boy, aged eight, with traumatic erysipelas. In three days he was well.

CASE 4. Tertiary syphilitic eruption about scrotum and perineum. The eruption would heal over, then break down and exude pus, then heal over again. I tried various remedies locally and internally. Graphites healed it in a very few days, apparently permanently.

There are some other skin conditions where graphites has served me well, namely, in chronic eczemas, constantly appearing and disappearing and usually associated with constipation.

CASE 5. A man, aged forty-five. This patient was well-to-do; his occupation, consulting engineer. He came to me with a history of chronic constipation. Had not had a natural movement in more than twenty years. As a young man, he had had a fistula which had been operated on. He was also troubled with eczema on various parts of the body, particularly about the arms and legs. The skin was seborrheic. He was quite bald and his eyebrows

were scanty. After prescribing more or less successfully for some acute condition, I finally gave this man graphites. It was very hard to break him of his cathartic habit but I finally did. After taking the graphites for a month or so, he came to my office one night in a most happy frame of mind. He had had the first natural, spontaneous evacuation of the bowels that day that he had had in more than twenty years. And what was more remarkable to me, he had quite a crop of hair on his head, and his eyebrows were much thicker. He finally got rid of his eczema also. That was four years ago.

CASE 6. Man, aged fifty-three, developed alopecia areata in the spring of 1908. From having a very heavy head of hair, this patient in two or three months developed totally bald spots about the size of silver dollar on numerous places all over the scalp. It gave him a very curious appearance, so much so that people would turn around to look at him in the street. This patient was also well-to-do. I had his scalp treated with alcohol every day by his barber and gave graphites internally. He is cured now.

I have also used graphites satisfactorily in a number of cases of chronic constipation where the skin was inclined to be oily. It is very hard to break patients of the cathartic habit when the habit is long standing, but it can usually be done with perseverance. For that reason, when I think something must be done temporarily, I recommend Rabinat water. This acts effectively on the bowels, but is so disagreeable to take that the patient never gets the habit. The Rabinat alternated with enemas, will keep the patient contented until finally he finds he can get along without help.—*The North American Journal of Homoeopathy*, December, 1909.

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### A CASE OF YELLOW FEVER.

By FRANCISCO VALIENTE T., M. D.

I have been lucky when treating yellow fever, as I cured seven or eight cases, following a treatment proposed by Dr. Holcombe, of New Orleans, which I modified occasionally according to the individualization.

I am going now to expose the most interesting one, which proves the excellence of Hahnemann's system.

The 8th of September, 1907, at 10 o'clock in the morning, I was visited by a Salesian clergyman, called Padre Farquino, who wanted to be assisted as suffering from fever with headache.



When I asked for the time when the fever began, he told me that he got it at 1 o'clock in the morning. He felt at first a great chill, at three headache and at six the temperature went up to  $39^{\circ}$ . The man felt badly with uneasiness and pain in the back, arms and legs, bulky tongue with a white yellowish fur in the centre, nausea and oppression.

I applied the thermometer which marked  $40^{\circ}$ .

The face of the clergyman was very red, the eyes suffused, and the edges of the tongue, as well as the gums and lips very red too.

He had vomited twice and seemed very excited.

I told him his case was a very serious one, and sent him directly to bed where he should wait for me.

I prepared some *Aconitum* 3x, ordering ten drops in half a glass of water, to be taken (spoonful) every half an hour until the sweat broke out, afterwards he had to take it every hour. There was no constipation.

When the bed linen was changed I ordered him to remain in bed without conversing with anyone; I had chosen to assist him one of his brethren, who was a man of good constitution. The fever declined a little at 4 o'clock in the afternoon, but the *Aconitum* was forwarded during twelve hours. At 10 o'clock in the night I gave him some *Belladonna*, because the headache was very strong.

The fever went up again to  $40^{\circ}$ , being accompanied by bilious vomiting this time. I gave him some *Ipecac* after every fit.

The patient slept very little, only few moments, five minutes each.

On the following day thermometer marked  $39\frac{1}{2}^{\circ}$  at 6 o'clock in the morning and there were few signs of delirium with nausea. I ordered *Bryonia* 30, every hour.

The fever came down to  $38\frac{2}{3}^{\circ}$  until 4 o'clock, then went up to  $39^{\circ}$ . At 9 o'clock in the night the thermometer marked  $40\frac{3}{8}^{\circ}$ , with heavy delirium which I was obliged to fight with *Hyoscinus* 6x and hot foot bath. The patient was able to sleep a little at 3 o'clock in the morning under the action of *Coffea* 30 each half an hour.

At 6 o'clock in the morning the thermometer marked  $38^{\circ}$  and the patient felt better. He was a little cheerful and felt thirsty. He vomited once some bile and made a sole deposition, the stool containing streaks of blood. As food he got only rice water, milk and water.

\*In the night the fever went up again to  $41^{\circ}$ , with some symptoms which made me fear a meningitis; Gels. 3 every hour and frictions everywhere with a sponge and lukewarm water.

The urine contained some albumen. On the eleventh morning the patient was far better, the fever coming down to  $37^{\circ}$ . He seemed very spry, asked for food and wanted to get up for going out. At 8 o'clock in the morning the thermometer was at  $37^{\circ}$ .

I thought this stage of remission very dangerous and of course did not agree to the desire of the patient, who felt some pain in the hepatic region, but when he asked for water there was no doubt that something fearful was going to arrive.

The temperature seemed invariably at  $37^{\circ}$  notwithstanding, but it began to rise at 11 o'clock with some new symptoms, as stomach ache, violent efforts to vomit flocculi, flatulence and noise in the belly, yellow sclerotic and vomited matter of a dark green color, with streaks of blood; Lachesis 6x every hour, until it was changed in the night for Arsenicum against exhaustion.

At midnight the vomiting matters were like coffee, disappearing with Argent. nit. 6x, and when the urine was retained I ordered some watermelon seed tea.

Notwithstanding the fever arrived again at  $40^{\circ}$ , but in the early morning it began to fall and the patient slept better.

On the 12th the fever came down to  $38^{\circ}$  at 6 o'clock in the morning, and as the matter vomited was coffee colored I gave him Argent. nit. The fever began to rise again at midday and at 3 o'clock in the afternoon there was some blood in the mouth coming from the gums and in the nose; Crotalus h. 6, each half an hour, and after four spoonfuls the hemorrhage was away. He slept a long time during this night in which he made only a black deposition with streaks of blood.

At 10 o'clock of this night the thermometer marked  $39^{\circ}$ , the patient being quiet.

On the 13th in the morning the thermometer marked  $37\frac{2}{3}^{\circ}$  and the patient was weak and thrown down. I continued to give him Arsenicum. At 3 o'clock in the afternoon the temperature was only  $37\frac{1}{8}^{\circ}$ .

On the 14th there was no fever. The patient slept well and awakened in good humor the next morning at 10 o'clock. After midday there was a slight fever until eleven at night. I gave him China 200. My clergyman was cured.—*The Medical Advance*, December, 1909.

## CLINICAL CASES.

BY CLARA H. WILLIAMS, M. D.

**SCORBUTUS ; CALC. PHOS.** September 26, 1908. M. P., age 13 months ; rather short, dark hair and very fine featured, was brought to office to see if any bones were broken or out of place. The baby would not now stand although she had before this been walking around chairs and taking a few steps while holding her hands. The parents were afraid that an unknown fall had injured her in some way. She whined nearly all the time. < when you moved her. < after she was out in her cart for a ride. Mother said that she noticed that she was much worse after riding one day and thought that the nurse girl might have let her fall out of the cart. She asked also could it be rheumatism as some had suggested ; she sent for me to tell her what was the matter with the baby. Upon physical examination I found the joints all freely movable and not painful, but the epiphysis of the femur was very sensitive and also the radius and ulnar slightly swollen. The gums were swollen and red.

The patient was a bottle fed baby. The mother had never given it anything but her food, except water occasionally. I told the mother that the baby did not have any of the things she thought it had. That it was scorbutus.

I had her give baby a teaspoonful of orange juice four times a day, beef broth and very little food. Cal. phos. cc. six doses, one each night. In one week baby was much better and improvement continued.

No more medicine and well since except light cold in head.

**DIARRHEA—CAMPHOR.** Sept. 30, 1908, 5:45 A.M. Telephone rang and in answer to call received this message :

"Come down to see papa as quick as you can, he is awful sick, has been sick all night."

I asked, "What is the trouble?"

"Diarrhea, he has to go every little while, and every time he goes he faints. He passes nothing but water, just white, and so many quarts or gallons, and he is so weak ; looks gray and is all gone to nothing."

I said, "Has he any cramps?"

"No, but the funny part is he has cramps in his arms and legs and he is so cold. Is there anything that we can give him till you get here?"

• I told them to give him a drop of tincture of Camphor in a tea-spoonful of water every fifteen minutes until he was better or until I got there, which would be in about two hours. I arrived at about 8 a.m. and found the patient much better; he was warm and his bowels had not moved since he began the Camphor. He said it seemed to just go to the right spot.

He gave the history of having drunk a glass of sour lemonade for his supper; did not feel well in the morning but went to work. He had to come home at noon. He thought he would get all right without any medicine but found he could not. I gave him a dose of Camphor cm. and left one more to be taken if he had any more loose stools. About 1 a. m. that night his bowels began to move again but this time the stools were very small, dark and offensive; patient very weak. Arsenic cm., one dose. Told patient to eat mutton broth with barley cooked in it. He was soon able to work again.

FISSURE—RATANIA. Nov. 14, 1908. Miss. M. F. came into office about 8 p. m. and greeted me with: "Oh! doctor, can't you do something to relieve this terrible pain, I have been in agony all day and I can't stand it much longer."

Her face was drawn, and clearly indicated that what she said was true.

I asked her to sit down and tell me all about her trouble. She said, "I can't sit down, I have fissures in my rectum and this morning when my bowels moved piles or something came down and will not go back, and those sticking, cutting pains are something terrible. If you can't give me relief I don't know what I will do."

The patient told me she was usually constipated, that the piles protruded at times before when her bowels moved, but always went back themselves until this time.

I made an examination and found the parts so sensitive that they could scarcely be touched.

I gave a dose of Ratania cm. dry on tongue, dissolved some cc. of same remedy in a quarter glass of water, saturated a compress of cotton with it and applied to the strangulated hemorrhoid. In about twenty minutes I was able to replace the hemorrhoid and the patient left the office quite comfortable.

She did not have any return of the trouble nor has she had since; the rectal fissures healed and remained so.

The patient had some powders of the cc. to use locally and the second best remedy to take internally.

August, 1907. W. M. Age 7 years. While running in bare feet stepped on a broken beer bottle and received a cut on the outer side of right heel about one and one-half inches each way, almost severing the tendo Achilles, angle about 60°.

This happened about ten days before I was called. Mother had been using carbolic acid in water and carbolic salve, but it did not heal and had become so sore and painful she was getting alarmed.

I found wound very much swollen, inflamed, the edges not approximated by about  $\frac{3}{4}$  of an inch, exuding pus and filling up with proud flesh.

Boy would jump and scream if he thought I was going to touch it, and kept saying, "It is so sore don't touch it."

Could not put foot to ground.

I washed the wound in boiled water, made a little pad of gauze, saturated it with Arnica cm. which I had dissolved in six teaspoons of water and bandaged over cut. Gave a dose of the same internally; left some powders of Arnica cm. to be used to keep the gauze wet and to open it but once a day.

Four days later (Wednesday) I called again; found wound not so sore nor inflamed, but still exuding pus.

Gave Calen cm. to be dissolved in ten teaspoons of water, a teaspoonful to be taken internally, and the rest to be used the same as the Arnica.

Next week the boy could walk a little without much pain, pus almost stopped, inflammation all gone.

Prescription continued locally but not internally.

Went back on Sabbath, fifteen days from first prescription: found that the patient had put on his shoe and gone with his father for a walk of two miles to see his grandmother. No more medicine.—*The Medical Advance*, November, 1909.

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## Gleanings from Contemporary Literature.

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### SOME CRITICAL REMARKS UPON HOMŒOPATHIC THERAPEUTICS.

BY DR. HAROLD WILSON, DETROIT, MICH.

The present paper is an effort to examine some aspects of the homœopathic practice of medicine. There is no intention of raising or discussing any questions other than those relating to facts upon which I hope we may fall into no violent disagreement. The necessary limitations of time prevent a thoroughly adequate discussion of the subject in hand, so that the argument becomes suggestive rather than cogent. To practice medicine without sometimes, at least, examining into the principles underlying the art; without reflecting upon what may be the rational justification of our acts, reduces one of our most important activities to a sort of automatism, the only advantage of which is a saving in wear and tear on the intellect.

Our inquiry is largely concerned with the practice of homœopathic therapeutics from the homœopathic standpoint. Let us then, in the first place, agree if we may, as to what Homœopathy is, and I submit the following definition :

*Homœopathy is a system of medicinal therapeutics in which the choice of a remedy to be given, is determined by the similarity in the symptoms of the patient and those produced by the given drug in a healthy human being.*

The principle involved in this definition is called the "Homœopathic Law" or the "Law of Similars." As a matter of logical necessity, this law must have been formulated as an empirical induction. That is, it must have come as an inference or conclusion from experience. There is no obvious necessary reason for its existence. There is nothing in the nature of drugs or disease by which it might be reached otherwise than by way of experiment and observation. The same thing is true of physical laws generally; they express merely an empirical or observed uniformity in certain operations of nature. The homœopathic school of practice accepted the "law of similars" primarily upon the authority of Samuel Hahnemann, and has made it more or less an exclusive rule of practice for a hundred years. Yet in all this time, notwithstanding great progress in Chemistry, Pathology, Bacteriology and Physiology, in fact in all branches of scientific inquiry, this law has never been made the subject of any proper critical examination. It has been looked upon as an ultimate fact, not to be violated by criticism or doubt. It has been placed by many writers in what we might call "the hierarchy of absolute truths," having the final perfection of a flawless crystal, as unalterable as a theorem in geometry. For my own part, I know of no

conclusions the human mind has reached, which may not be changed by the growth of human understanding. Instead of seeking impartially to examine into the truth of the law of similars, we have been content to fill the literature of Homœopathy with thousands of reputed cures. It is perfectly true that any therapeutic law must depend largely or altogether upon the clinical test, and I am not unmindful of the importance of clinical literature, but I am overborne with a vivid consciousness of the utter inadequacy of this very mass of testimony viewed as scientific evidence. This fact was recognized long ago. In 1853, Dr. J. H. Pulte said: "It cannot be denied that on the whole, the cases in Practice, as reported in the Homœopathic Journals, have become almost utterly without value for the instruction of practitioners, since they commonly do not contain anything beyond the recital of a mass of symptoms, related without order or pathological connection, together with a string of remedies, the necessity for exhibition of which is made very seldom apparent. We have read hundreds of cases thus recorded in foreign and home journals, in which the above fault stood out prominently, yet we never have seen the slightest effort made on the part of the profession or the editors to have the evil thus growing upon us, corrected or removed."

The defect to which this writer refers have continued ever since his day to vex the earnest student and to encumber or obscure the value of most clinical literature upon the therapeutic value of drugs. It is therefore of much less value as proof of similars than is commonly supposed. We are all prone to receive testimony favorable to our beliefs with a minimum of criticism. At its best, clinical experience is full of pitfalls; at its worst, it has no scientific value whatever. To be accepted as evidence it should be made to conform to conditions as stringent as those necessary to a laboratory experiment. If any one tells us that the law of similars is confirmed by his daily experiences in practice, I feel constrained to admire his beautiful optimism more than his scientific accuracy. The movement now on foot to establish a "Society for Clinical Research," as a step toward elevating clinical medicine to a position where its scientific character will be equal to that of other branches of medicine, is a recognition of its present unworthiness, and a beginning in the direction of giving to its literature a real value which heretofore it has never possessed. The present similarity between some of the "Cases in Practice" to be found in our journals and society transactions, and those which fill the advertising matter of proprietary nostrums and quack doctors, is no more lamentable than obvious.

Reverting to our definition of Homœopathy, a few points should be emphasized:

1. We have the symptoms of the patient on the one hand—those subjective and objective manifestations which we call the "totality of the symptoms"—ranging from those inscrutable and inexplicable psychic

changes which constitute perversions of mind or character, to the grossest pathological lesions of the body.

2. We have those symptoms, psychic and somatic, produced in the healthy human body by a given drug.

3. In order that the law of cure may be operative, it is necessary that these two categories be similar. This similarity is a parallel relationship. It has not the identical similarity of two like geometrical figures, and yet, as with these, it is determined by the correspondence of parts or symptoms, not all of which, however, are necessarily of equal value. It is commonly believed by homœopathic practitioners that given a certain complex of disease symptoms, they may be relieved—that is, the patient may be cured—often by any one of a number of drugs whose symptoms differ in similitude to these symptoms, more slowly and more uncertainly by the less similar drugs, more quickly and more certainly by the more similar, and the term “*similimum*” is often used to designate the drug with the most similar symptomatology.

In considering these propositions, one fact impresses us at once, viz., that empirical therapeutics has no logical place in such a system. There is no room in the law of similars for any therapeutic procedure based solely upon practical experience. It is not enough to say that you give  *Bryonia* for typhoid, or *arsenic* for malaria, or *phytolacca* for an indurated breast; that you begin the treatment of a chronic case by giving a few doses of *sulphur*, nor even that you give *aconite* for a fever marked by restlessness, anxiety and a quick hard pulse, because you yourself or some one else has found these remedies curative to these symptoms. Such therapeutics is not homœopathic unless the conditions of the law are strictly observed. This is not to say that one may not cure a patient homœopathically unless the conditions of the law can be shown to obtain. On the contrary, granting the existence of such a law, the natural limitations of knowledge relative to disease and drugs would render such a thing altogether probable. But in examining the fundamental principles of homœopathic therapeutics we can admit those testimonies of experience only, which conform strictly to the canon of the law.

There is no small amount of confusion as to what constitutes a homœopathic cure. I know practitioners who think that to give a homœopathic drug is homœopathy, and since it would be hard to find a drug in the symptomatology of which there is not at least one symptom of any patient, perhaps, to that extent it is. These are the same practitioners who claim to be homœopaths because most of their drugs are purchased at a homœopathic pharmacy. They are near cousins to those others who believe themselves to be better homœopaths than their fellows, because they use higher attenuations.

With care, experience and skill on the part of the physician, the symptoms of the patient may be elicited and set down with a reasonable



degree of accuracy, but when we turn to the drug symptoms, we meet with something far more intricate and much less satisfactory ; something that has been the subject of no end of controversy ever since the time of Hahnemann. *Allen's Encyclopædia of Pure Materia Medica* contains over 4000 symptoms attributed to *sulphur* ; 3300 to *thuja* ; 2500 to *belladonna*, etc., and these numbers will be increased with every new study of the drugs in question, if carried on along the usual lines.

This accumulation of a multitude of symptoms accredited to the drugs constituting a homœopathic materia medica, has arisen as a necessary consequence of accepting Hahnemann's rules for the proving of drugs. Among those paragraphs of the *Organon*, describing the conditions under which provings are to be made, is the following :

\* \* \* \* \* Every symptom and deviation from the normal state of health observed by the prover while under the influence of the drug, is derived only from the latter, and must be regarded and noted as a symptom belonging to it, notwithstanding the prover may have observed similar and spontaneous sensation upon himself *some time ago*. The reappearance of the same kind of sensations during the proving of a drug shows the prover to be particularly susceptible to the influence of drugs, owing to his peculiar bodily constitution. In the present instance, the effect should be ascribed to the drug, for symptoms do not come of themselves, but they are due to the active drug which has been administered, and which controls the state of feeling of the entire organism."

"This rule has universally been interpreted to mean that while making the proving, the prover is to record all of his sensations, outside of those sensory experiences essential to simple organic existence. Now everyone knows that in addition to what are called "massive sensations," those that are fundamental to, and constitute the general physical basis of consciousness, each one of us has many uncommon, individualized or special physical sensations, often differing in general character in different persons, and varying in the same person in place, character and intensity. There is not a day passes but each of us has at some time some bodily sensations more or less unusual or unique. Most of these experiences leave but a transitory record in consciousness ; often we scarcely sense them, and anyone who will carefully note them down, may be surprised at their number and variety. If many observers were to do the same, we could soon create a body of symptoms which would be upon their face, quite indistinguishable from what we now accept as the pathogeneses of many drugs in the homœopathic materia medica. This fact is so easy of demonstration, that we must accept it as proven.

Now I can find no evidence to prove the assertion Hahnemann makes in the paragraph quoted above, that "every symptom \* \* \* \* \* observed by the prover while under the influence of the drug, is derived only from the latter," and it is impossible to see how this could be de-

monstrated, either as a logical, or in the way of direct proof. On the contrary, it would seem to be most highly probable that no symptom which the prover had previously experienced was at all likely to be due to the drug, unless it could be shown to recur with sufficient regularity and constancy to establish its relationship as an effect of drug action. Thus it is conceded that constipation is a well-nigh universal experience, everybody probably at some time having this symptom. It has also been proven to be the result of the action of certain drugs, such as *opium* upon the human organism, but we have reached this knowledge only after many observations as to their constipating effects. Its occurrence, however, as a casual phenomenon during many provings is not likely to be due to the drug at all, and could be proven to be so, only after repeated trials. Even if certain symptoms experienced by the prover at an earlier time, could be definitely shown to have been re-awakened by the administration of the drug which was being proved, it is difficult to see why or how they should necessarily be assumed to be symptoms of the drug itself and incorporated in its pathogenesis.

Perhaps one of the rocks upon which we may suffer ship-wreck in our endeavor to reach a mutual agreement is that of individual idiosyncrasy to drugs; a fact, the general truth of which no one will deny, but which has served to excuse the admission to the materia medica of innumerable unrepeatable symptoms, which in many instances have become *key notes* or *characteristics* of the drugs in whose provings they occur. We are even told that in the proving of a drug, as in the symptoms of a patient, for whom we are about to prescribe, the most valuable symptoms are the peculiar, individual, uncommon or unique ones, and that the most useful provers are those having unusual sensations. Instead of having placed the emphasis upon symptoms that have been experienced by many provers in common, or upon the repetition of the same series of symptoms in any one individual, or upon the carefully conditioned circumstances under which the symptoms were experienced, and their relation to various peculiarities of the prover himself, we have been taught rather to place it upon the unusualness of the symptom itself, thus really inverting its importance as a scientific observation. If it were true that while proving a drug, any deviation from, usual or normal sensations which the prover experiences were due simply to the direct action of the drug, then the mere fact that a certain symptom occurs but once, and in one proving, would make it no less valuable than if it were recorded by a hundred persons. This, however, is precisely the point which I cannot admit, for the action of a drug upon the human body can hardly be shown to pervade all organs, tissues or cells, so that every function of these organs or sensations originating in them, is conditioned by it. In other words, after and during the administration of a drug, whether for the purpose of securing a proving of it, or for the relief of disease symptoms, or for any other reason, it is most reason-

able, most in accord with common observation, to suppose that at least some functions of the body are carried on in their normal way, quite uninfluenced by the drug in question and that many bodily sensations occur as the result of causes not in any way related to it.

Let us examine some of the drug symptoms upon which the practice of homœopathic therapeutics is based. In a recent authoritative text-book upon *Materia Medica* there is given a list of what are called "*Five Grand Characteristics of Belladonna*," as follows :

- "1. Pains gradually increase, suddenly decline and appear elsewhere.
- "2. Painful spots are sore on gentle pressure, yet firm pressure is tolerated.
- "3. Hot, red skin; flushed face; full hard pulse; throbbing carotids with delirium; hyperæsthesia of the senses.
- "4. Great dilatation of the pupils; photophobia and injected eyes.
- "5. It affects principally the right side of the body."

It is to be understood that these five indications are given as representing the essential essence of the pathogenesis of *belladonna*, a brief working basis, if you please, for the practical exemplification of the homœopathic law. We may suppose that even if there are doubtful symptoms among the several thousands in the recorded provings of the drug, these at least are beyond question, and the medical student is expected to learn and remember them; in short, to make them fundamental to his subsequent practice of homœopathic therapeutics, as far as *belladonna* is concerned. This much we have supposed, but let us examine these "*characteristics*" more closely.

The first "*characteristic*" in the above list is not to be found among the symptoms recorded under *belladonna*, either in Hahnemann's *Materia Medica Pura*, in Allen's *Encyclopædia of Pure Materia Medica*, in the *Cyclopædia of Drug Pathogenesis* or in the *O. O. and L. Test Proving*. The nearest approach to it I am able to find is symptom 1040 in the *Materia Medica Pura* (2219 in Allen), attributed to Gross, one of Hahnemann's disciples, which is as follows : "*Ordinarily, when the pain had reached its highest degree, it disappeared suddenly, and instantly there arose in its stead a pain in some other place.*" This, although a somewhat similar symptom, is by no means the same, and it is not italicized (if that has any significance) by either Hahnemann or Allen. Nash says : "*The pains of belladonna appear suddenly, and after a time disappear as suddenly as they come.*" This again, is a different symptom from either of the above. In the *O. O. and L. Test Proving of Belladonna* we find "*Pains coming and going quickly*" (10 days); "*migratory pain*" (91 days); also, "*transient,*" "*fugitive,*" "*fleeting,*" "*flying,*" "*sudden,*" "*momentary,*" and other pains, but no record of such pain as is given by Dewey as characteristic of the drug. Is it possible, then, that a symptom which cannot

be found in the pathogenesis of a drug is to be considered one of its "grand characteristics?"

Let us look into the second "characteristic" in the above list: *Painful spots are sore on gentle pressure, yet firm pressure is tolerated.* This symptom is often found in hyperæsthesia of the skin; many of us have repeatedly experienced it in our own persons, yet I am unable to find the symptom in the *Materia Medica Pura*, Allen's *Encyclopædia*, or in the *O. O. and L. Test Proving*. The nearest approach to it is in the latter work, where among 53 provers reporting, one records "pain about ileum, worse by slight pressure." In Allen, simple sensitiveness to contact or pressure is frequently recorded, in a variety of conditions.

It is certainly surprising that the first two symptoms among five set down as "grand characteristics" of a drug, should not even exist in its pathogenesis yet careful and assiduous search of the standard literature of provings has failed to discover them.

The third symptom in the list, *"Hot, red skin; flushed face, etc."* is found in innumerable provings and cases of poisoning. There can be no possible disagreement as to its being a marked and real symptom of *belladonna*.

The fourth symptom, *"Great dilatation of the pupils, etc.,"* is likewise beyond question, having been observed thousands of times. It should be noted, however, that the photophobia is almost always and altogether due to the mydriasis produced by the drug, not to inflammatory hyper-sensitiveness.

The fifth symptom, *"It affects principally the right side of the body,"* is much less certain. In the *O. O. and L. Test Proving* the number of days upon which the symptom was recorded among all the provers, was:

For all symptoms—

On the right side	...	...	...	621
On the left side	...	...	...	630
Worse on the right side	...	...	...	142
Worse on the left side	...	...	...	127

For the head symptoms—

On the right side	...	...	...	91
On the left side	...	...	...	17
Worse on the right side	...	...	...	17
Worse on the left side	...	...	...	2

So far as these records go, they show that, in general, the drug affects both sides of the body equally, but that among the head symptoms, those affecting the right side preponderate.

In Allen's *Encyclopædia* there are in the whole proving of *belladonna* for all symptoms—

On the right side	...	...	...	83
On the left side	...	...	...	83

For the head symptoms (not including eyes, ears, nose, throat and face)—

On the right side ...	...	...	...	19
On the left side ...	...	...	...	12

There are altogether 232 head symptoms. From this record, we are justified in saying that in general, the drug affects the whole head, rather than either side in particular, but that where the pain is one-sided, there is a slight preference for the right side.

In replying to these figures, I do not see how it answers to say, as you may, that you have found *belladonna* most useful as a right-sided remedy. I do not wish to deny this, if you affirm it, but this is empirical medicine, not homœopathy, since the therapeutics of a drug must come out of its pathogenesis if we are to establish its curative action as homœopathic.

I believe that our examination of these so-called, "*Grand Characteristics*" of *belladonna* is accurate and fair, and that it entitles us to assert that three out of the five are misleading, being without the basis of truth most essential to such symptoms. Yet the work in which they appear is a text-book in one of the leading homœopathic colleges of this country, and it is to be presumed that scores or hundreds of students have committed them to memory as gospel, and moreover use them more or less, as guides in the practice of what they suppose to be homœopathic therapeutics. I have chosen *belladonna* for this inquiry, on account of the importance and common use of the remedy, and the abundance of provings, especially the very recent and exhaustive Test Proving of the O. O. and L. Society. What might be revealed by an analysis of the so-called "*Leading Characteristics*" of other drugs, we have here no time to enquire, but the investigation might well be profitable as well as interesting.

It would seem to be beyond question, that the pathogenesis of a drug is the only logical basis for a true homœopathic prescription. If we use in practice other guides for the administration of drugs, we should recognize the fact that such methods are not in accordance with, and do not exemplify the law of similars. We must not claim that the law is the only guide to the choice of remedies for the cure of disease, and then in our daily work, proceed on a quite different basis. That symptoms, conditions and circumstances outside of its pathogenesis, were used by Hahnemann himself as guides for the administration of a remedy, I am quite well aware: and, too, that the practice has been in common use ever since his time. For example, Hahnemann says: "For the effects of fright, when it can be given immediately, and especially if it has produced fear, *opium*; but where we are called in only after the lapse of a considerable time, or where vexation is combined with fright, *aconite*." "Unfortunate love with silent melancholy, *ignatia*;

if with jealousy, *hyoscyamus*." "*Pulsatilla* is indicated for women whose catamenia are retarded by a few days, and for the effects of eating pork when it disagrees." Dudgeon says: "I believe it will be generally conceded that Hahnemann's recommendation of *arnica* as specific for the effects of falls, blows, knocks, bruises, sprains or lacerations of the soft parts, was owing more to its ancient repute as a vulnerary among the common people than to the pathogenetic effects he observed from its administration. It was, as he himself tells us, experience that convinced him of the efficacy of *rhys* in the effects of sprains and inordinate muscular exertion and bruises."

A recent text-book gives the following indications for certain remedies: "for tall, slim females with narrow pelvises, *sepiâ*"; "for tall men, phosphorus"; "for thin, spare, irascible patients of a nervo-bilious temperament, with great sensitiveness to external impression, *nux*"; "the child is impatient and restless, wants to be carried about and petted; cries for things, and when it gets them, throws them away. \* \* \* \* \* consequences, of anger, *chamomilla*." "To the extremes of life, infancy and old age, carb." "Corresponds to the scrofulous diathesis, *silica*."

There has been much writing upon the principles governing the selection of the remedy; less, I think, of late than in former years, and one reason for this is that the current text-books upon *Materia Medica* and *Therapeutics* have gradually absorbed and adopted a large number of such indications as those just quoted, and have so mingled them with those derived from pathogenesis, that they all occupy a more or less equal place as guides to practice, and cannot be distinguished as to their origin by the ordinary practitioner. Further, we are prone to accept the symptoms given in the repertories and works on practice as legitimate indications for homœopathic practice, because they are in the books, and yet it would doubtless amaze all of us to find how many of these, even many of those we cherish most, cannot be found in the pathogenesis of the remedy to which they are assigned. That is, it would doubtless surprise us to find how much of our practice, which we call "homœopathic," cannot by any rational effort be made to conform to the definition of homœopathy we accepted in beginning this discussion, but must be recognized as empiricism, the medicine of experience, something we used to have bad words for. Without doubt, empiricism is a most excellent guide in many aspects of medical art, but it is always art, not science. It has been the boast of the homœopathic school that it has elevated medicine to the rank of a science, and that therapeutics is the exemplification of a natural law; that the homœopathic prescription has the accuracy of an operation in any of the physical or mathematical sciences. It is a fair question for us to ask ourselves, how far we are entitled to make this claim. I will venture the affirmation that in the daily round of the average practitioner, not once in a hundred prescriptions is a clear and adequate picture of the symptoms of the patient on t'

hand, and those of the drug on the other, in anything like their totality, and that the truth is, the average homœopathic prescription is evolved from a more or less imperfect knowledge of the patient's symptoms, and a picture of the drug, compounded of real and imaginary pathogeneses, the *dicta* of various authorities, and personal clinical experiences. This is probably a great improvement upon "calomel and jalap," venesection and the general crudities of a primitive and often dangerous polypharmacy built upon pathological misconceptions and superstitions. It may be better than many other sorts of empirical medicine, but we ought, in the interests of truth and honesty, not to lose sight of its real character.

The homœopathic materia medica is even yet, after more than a century of effort, a miscellany of the most heterogeneous elements. Nearly everything that anybody has contributed in the way of drug provings, has gone into it, and only the most obviously or flagrantly unreliable material has ever been thrown out. Thus the pathogenesis of *belladonna* in *Allen's Encyclopædia* contains symptoms observed in whooping cough, cancer of the lip, tumour of the breast, in 22 epileptic patients, 3 cases of jaundice, incarcerated hernia, pemphigus, mammary induration, mammary scirrhus, angina faucium, melancholia, hydrophobia, pain in bowels, diabetes, insipidus, and insomnia. Does this sound like material for the pure pathogenesis of a drug? Those who make text-books and repertories not infrequently select symptoms upon a typographical basis. Dudgeon says (l.c. p. 308): "A favorite achievement of these learned gentlemen on both sides of the Atlantic, is to cull from *Jahn's Manual* all the symptoms that diligent compiler has distinguished by italics, and in this way make books, the size of whose pages makes them serviceable for shaving paper, but for no other purpose that I wot of." Experiments upon drug effects from careful, trained and intelligent observers stand side by side with those from persons of no training and little understanding of the conditions of a scientific observation. Painstaking observations to determine definite and pure drug symptoms keep company with a romantic and disreputable assortment of neuropathic vagaries, and trivial and unmeaning sensations. We have been promising ourselves during all these years, that we would some day begin the process of selection and elimination, and have indeed at times made an effort to that end. But every attempt to reduce, purify or set in order this vast array of symptoms has met with an amazing amount of opposition, and as far as I can see, has produced very little effect. The *Cyclopædia of Drug Pathogenesis* was a scholarly effort, but its present position seems to be that of an interesting and erudite work, valuable chiefly as a collection of provers' notebooks, and as an ornament to our book shelves. Yet how can we ever reach a position of rational scientific security in therapeutics until we possess a materia medica that contains only those symptoms that are the true expression of drug effects upon the healthy

human body, as free from error as the necessary limitations of experiment and observation will permit? Of what value is clinical experience, the report of cases, if the drug symptoms governing the prescription cannot be shown to be real? The prescription of a remedy according to the *law of similars* is so direct and simple, that it has something of the fascination of a problem in mathematics, or a dissected puzzle, and there is in our minds a strong tendency so to concern ourselves with the symptoms that we overlook the fact that, like the letters and formulæ of algebra, they are no more than the signs of some externally existing realities.

The selection of the remedy, its dose, its repetition, the appearance of the symptoms in the patient, the dangers of departing from a certain order of procedure, the homœopathic aggravation, and much else that has been made the subject of voluminous writing by certain members of the homœopathic school, as well as their speculations and utterances as to the causes of disease and the action of remedies, must be largely relegated to the category of mysticism, yet I remember when beginning the practice of medicine, I was not infrequently in a sort of terror of apprehension lest by giving the patient the wrong remedy, or the right remedy in the wrong attenuation, I might "spoil the case," and forever lose the possible chance of effecting a cure. Such was the effect of what was then taught to us homœopathic therapeutics, but which I can now regard as no more than a metaphysical mysticism. I do not wish to intimate that hypotheses are not useful and necessary adjuncts to scientific progress. They are often the stepping-stones by which we cross the rivers of ignorance. Even that we call "established facts" may have their elements of uncertainty, but assumptions should not masquerade as knowledge.

Before the homœopathic school can properly claim a position in the front rank of the onward moving sciences, I believe that a number of things must be done:

1. The law of similars must be investigated with the aid of all the scientific methods and knowledge in our possession at the present time. No pains should be spared in the effort to demonstrate it beyond criticism. We should not be content to rest our case upon such testimony as now supports it, for I am firmly convinced that this is not adequate to demonstrate a universal therapeutic law. If this law can be shown to stand the most rigorous tests of modern scientific inquiry, it will take its proper place in medical science without the aid of any fostering propaganda. In fact, what the homœopathic school needs now, is investigators, not propagandists.

2. The effects of drugs upon the human body should be studied so as to eliminate from their pathogeneses as far as possible, all symptoms that cannot be shown to be the genuine effects of drug action. That is, and



it is no new cry, the materia medica, the one indispensable working tool of the prescriber, should be made accurate and dependable. Its accuracy and truthfulness are what make homœopathic therapeutics possible. There is no meaning in a prescription based upon drug symptoms that are not genuine. The practice of such a therapy is purely fictitious.

3. Finally, we should learn to recognize the fact that the physician's highest calling is to restore health to the sick, to prevent the development and extension of disease, and to advance the science of medicine. If such a thing as a medical creed were ever necessary or desirable, it should be the aspiring utterance of an intelligent liberality, in which all physicians could join. The profession of medicine is, and should be, a community of workers united by deep and common interests. We are parts of a universal brotherhood, whose aspirations and whose activities exist less for our own glory than for the welfare of mankind.—*The Medical Counsellor*, December, 1909.

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Vol. 'xxix.]

March 1910.

[No. 3.

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HAHNEMANN'S LAW AND SCIENCE.

BY ALFRED WANSTALL, M.D.

Baltimore, Md.

HAHNEMANN'S LAW.

Man has adopted for his use from nature whatever is, or may be, adapted to his manifold requirements. In order to do this it is, very many instances, necessary for him first to discover certain of nature's laws. He has seldom been able to make many or few of these adaptations by virtue of any one law, or single principle; and so far as actual law has been necessary in certain of these adaptations, each individual adaptation has had its own individual law or laws. The adaptation of the skins of animals for clothing and their necessarily previous curing may be wholly empiric, but cotton and wool require the invention of machinery, simple or complicated, before they can be utilized.

Among the many adaptations from nature by man is the use as medicines or curative agents of such bodies or elements as possess drug or toxic properties when ingested or injected into man. It is obvious that a rule, principle or law under which the natural phenomena of things so diverse in nature, composition and effect could be grouped or generalized for their application to other things or conditions not less complex, would enormously forward the carrying out of man's desires regarding them in practice.

In the case of drugs, on the one hand, and diseases on the other, there are phenomena common to both which permit of their being grouped or generalized under either of two rules, principles, or laws. It matters little how we name them as long as we know just what they mean. The primary and instinctive impulse naturally associated them according to their apparently antagonistic or contrary relationship as the preliminary necessary guide to their use in practice. It remained for Samuel Hahnemann to vitalize the equally obvious relationship of similarity or likeness, which he believed to be not an empiric principle, rule or law, but a veritable law of nature, even of divine origin, for the cure of disease; and therefore, not being supplementary to present or future methods or dogmas, but supplanting them, and being in itself all sufficient for the future.

For this reason I shall habitually refer to it as Hahnemann's Law, retaining the word "law," for a word long used is more difficult to dispense with than the idea with which it was originally associated. The original idea may unconsciously change, or even be lost, but the word or formula will remain the same; I shall attempt to show more particularly, in the present paper, that the creation and use of the practical details formulated by Hahnemann for carrying his law into execution are so dependent, in all its stages, upon such varying individual human interpretations and conditions, that it cannot be applied, even in a restricted sense, according to the requirements of exact science with its unvarying relation to natural law.

A natural law, once discovered, may be demonstrated only by exact science, and the steps in its execution must be in a certain prescribed order; from which nothing can be omitted and to which nothing can be added, and the means must always be the same; it is not subject to change except by modification or expansion, and the reaction or result is almost always immediate and complete. But above and beyond all else it is never dependent upon individual interpretation; and it does not permit of variation, omission or disorder in its demonstration, without resulting in more or less complete failure. I shall

attempt to show that it is impossible to exclude these factors from the details of the demonstration of Hahnemann's law; the results of which are characterized by more or less incomplete success rather than by complete success or absolute failure.

The difficulties of presenting this subject to minds long habituated to an idea are almost insurmountable and compel the resort to the subtleties of philosophical reasoning, psychological conditions and logic, rather than to what should be demonstrable owing to the circumstances that what facts exist are of such a nature as to absolutely preclude their analysis by any scientific data, for even the decision regarding the results is as much a matter of individual determination as is the use of the means for attaining them.

That unnumbered substances or things, animal, vegetable and mineral, simple and compound, natural and artificial, shall be applied for the cure of disease alone by virtue of one universal law of nature is possible, at the present day, only for minds which have not accepted the principles of evolution, and which hold, consciously or unconsciously, to the teaching of a complete creation; of everything in its place and a place for everything; that is, a conscious creation of each thing for a specific purpose and an inviolable law for its carrying out. In the case of medicine, the law of homœopathy, or as I prefer to style it here, Hahnemann's law. A physician recently speaking at an Emmanuel meeting said: "It stands to reason, that the toxic properties of natural products must have been given them for a purpose." The obvious conclusion being that it was for the purpose of curing disease. The same process of reasoning would inevitably lead to the conclusion that the sole purpose in nature of cotton and flax was to make bedding, clothes and ropes. To fully appreciate the manifest absurdity of this method of reasoning one has only to carry it to obvious and logical conclusion by applying it to all known things in nature regardless of their immediate bearing upon the question being discussed.



That Hahnemann's law should still be regarded by a large body of cultured men and women from his standpoint, is being also a natural law, and that the practical application of it is in accordance with the requirements of science as applied to natural law, by which numberless and unrelated natural products are applied for the cure of numberless and unrelated natural diseases, is so contrary to what we now know of nature and her laws in general, that it must strike the cultured, but uninitiated mind with amazement. Although it is not difficult to understand why Hahnemann should have so regarded it when due consideration is given to the general backwardness of science in his day, the practically total absence of a knowledge concerning the teachings of evolution, the almost universal belief in a complete and perfect creation, and Biblical authority for the existence of disease as a deliberate and disciplinary act of God.

If Hahnemann's law is also a veritable law of nature, then, of course, it has a scientific basis, it is necessarily permanent and progressive, constantly evolving and refining with the intellectual growth and evolution of its promoters, and by the progress of science in general—for there is a unity in all science. If it is not a law of nature, then it is an empiric, but systematic principle, as is the law of contraries, and everything is radically different, and there is no middle around. In the latter event it has not a scientific basis and it is not necessarily progressive, except in so far as, a purely working hypothesis, it might have led to the uncovering of individual natural laws, the science of which would have been progressive, but for Hahnemann's own embarrassing claim of its being the law. Embarrassing because it has effectually stopped the further and closer investigation of the many clinical facts it has itself uncovered. It is not permanent, and its tendency would be, not alone not to progress, but to regress, and even to be deprived of its own partial triumphs by the natural progress and encroachment upon it by the evolution of science as related to medicine. Witness, for instance, the development of a therapeutics upon the natural science of bacteriology, now claimed as a homoeopathy, and recall the earlier con-

tention whether potentizing converted an isopathic substance into a homœopathic remedy. If homœopathy is not based on natural law, any attempt to lay a scientific foundation for it, at the present day, is bound to fail, unless a frank understanding of its true significance could show it to be not too late to lead it into the channels it would have naturally followed if it had not been diverted by the dogma of itself being the natural law.\*

Naturally, if Hahnemann's law is a natural law, homœopathy is a natural science. Contrast its means, application and results with those of the newest natural science, that of bacteriology; a natural science related to the science of medicine only in so far as certain bacteria are pathogenic. And yet we can speak of no law applicable to the science of bacteriology, each kind of bacteria being governed by laws of its own, i.e., it has its own natural science. Doubtless this will not be considered a fair comparison, but where in nature will one find a natural science with which to compare it.

#### HOMEOPATHIC SCIENCE.

What character of science would be necessary to demonstrate the natural and scientific basis of Hahnemann's law? Certainly, it cannot be demonstrated by claiming homœopathicity, in a Hahnemannian sense, for serum therapy. Even if the promoters of serum therapy should claim it to be, or admit the claim that it is, homœopathy, nothing more would be necessary than an accurate knowledge of just what the homœopathy of Hahnemann is to clearly demonstrate that it is something quite different from serum therapy. Quite fundamental differences and distinctions can exist between things which on superficial examination seem to be similar. We should not be misled by statements such as Behring's and Cememo's when the former, speaking of a new tuberculo-therapeutic substance, says: "The scientific principles of this new agent are yet to be established. In spite of all scientific speculations and experiments this therapeutic usefulness must be traced in origin to the principle which cannot be better characterized than by Hahnemann's word 'homœopathic'; and the latter, who now deplors having attacked

Hahnemann and his disciples twenty-five years ago. While both of these men appreciate the usefulness of the principle of similarity as a provisional explanation, they full well know that this explanation is not science, and that, after all, it explains nothing, and, in adopting it, it is with no conscious intention of endorsing Hahnemann's dogma, regarding the intricacies and refinements of which they know nothing. And finally, serum therapy is based on the natural science of bacteriology and not on the homœopathic art.

Official homœopathy is not simply the empirical use of nature's principle of similarity as it appears existing in the special instance between the manifestations of drugs and the manifestations of diseases, but it is that principle dogmatized in Hahnemann's law. It is not the rational utilization of this principle as a therapeutic recourse that has repelled, and still repels, the general medical mind, but its irrational dogmatization of natural law. There is no telling how far the principle might have gone, or may go, if it had not been made domestic or if it were, even at this late day, wholly freed from its dogma. Similarity is a negative relationship seen everywhere in nature—something more in an appearance than in reality—and many range from the merest suggestion to an extreme degree, but never beyond that point where some basic or fundamental fact of difference absolutely stops it from merging into identity. Otherwise it was never similarity, and for this reason alone it lacks the basic requirements of a natural science, for a natural science cannot be based on varying degrees of a negative relationship. It is these conditions which permit one to disbelieve in Hahnemann's law, and make little attempt to follow his precepts, and to believe in homœopathy and practise it faithfully within its natural limits. There may be a similarity, or even a contrariety, between the movements of a dog's tail and the expression of a human face according to whether both are animated by the common emotion of pleasure, or one by it and the other by anger. In homœopathic circles too little attention has been given to a full comprehension of the negative quality and the indefiniteness

of numberless indications that are forced to do service in establishing a similarity and in practice (not in theory), the absence of uniformity in procedure. Theoretically the procedure and result are the same in Maine as in California or India, practically they are not often met in two physicians in the same room.

And surely, citations of examples of the divisibility of matter from the pure sciences do not tend in the slightest degree, even, to lend plausibility to Hahnemann's law, much less establish its scientific basis. That is altogether another story. If dynamization or potentiation (not simply dilution or attenuation) had never been conceived, Hahnemann's law would not have been affected one way or the other, except in so far as this idea may have contributed to the intellectual confusion regarding the "law's" real status. While dilution and attenuation grew out of the anticipation that drugs given on the principle of similars, unless greatly modified in dose would naturally tend to aggravate the disease, it does not explain the origin of the doctrine of dynamization or potentiation, unless some thought it was necessary to satisfy the mind regarding a procedure of so negative a quality, and in order to account for the recovery of patients under their use. Though there is a strong probability that it was suggested and found support in the apparently extreme attenuation and remarkable activity of the elements concerned in the transmission of contagion, something we now understand.

Examples from physicists of the degree to which the divisibility of matter can be carried do not even tend to demonstrate the therapeutic efficacy of dilutions of drugs carried to the same degree of tenuity, and this is not even considered "high" in homœopathic circles. The division and disintegration of matter is an ever continuous process in nature, and all living things are exposed, as they have always been exposed, to dilutions and attenuations of matter of all kinds and of every possible degree, surrounded by which they have evolved, and to which, so far as they have not been negative or salutary, they must have acquired immunity.

For instance practically all of Dr. Copeland's most recent paper on "The Scientific Reasonableness of Homœopathy" is devoted to proving this proposition by the latest evidence of science regarding the complete dissociation of molecules and the complete ionization of matter. According to the evidence presented in this paper, complete ionization takes place in solutions corresponding to the 5th to the 8th decimal dilutions. It is freely conceded that the properties of completely dissociated matter are the sum of the ions present in the solution. As "complete ionization is possible," says Dr. Copeland, "only in infinite solution," let me cite an example or two to show how readily this is obtainable in the human body itself, and relieve it at once of all mystery and cause for wonder. An average dose of morphine for a average individual is one quater grain, hypodermically. Assuming that there is no waste and no other distribution but the blood, if it all reached there and was kept there, measured in units of weights, it is as one grain of morphine to 205,200 grains of blood, i. e., between the 5th and 6th decimal solution. If allowance is made for waste and distribution to the lymph and other fluids and constant elimination, which begins as soon as absorption has taken place, the nerve cells—for which it is ultimately destined—must be bathed in solutions still more dilute and in a state of still more complete ionization. If each red blood corpuscle (a very material object in microscopic cell life) were to receive its modicum of the one quarter grain of morphine (and no other distribution) each red cell would contain 1-64,800,000,000th of a grain, beyond the tenth decimal dilution. Greater doses, of corresponding equivalents, of the mother substance, after running the gauntlet of the digestive apparatus, when finally brought into solution in the blood and fluids of the body, are undoubtedly in solutions corresponding to complete ionization. Further, the various alkaloids and other products of the mother substance may not act as a mass, but as individuals in subdivision with mutual modifications, and so on, and what seems on the surface large dosage may be, in reality, in the depths, small

ones. Yet, we cannot escape the fact that there is a definite mass relationship which cannot be materially exceeded without destroying life, and which cannot be materially decreased without missing its perceptible physiologic effects and probably its therapeutic ones as well. There seems to be nothing in ionization incompatible with the common dosage of drugs, and it throws no light on dynamization homœopathically understood.

All will admit that each drug is individual to itself, and that each disease is individual to itself, yet, homœopathy does not consist alone in selecting a drug for a disease, but in selecting any one (or more) of several hundred drugs for any one of several hundred diseases. The selection always being only momentary, has always to be made anew with each disease, or a number of times during the course of the same disease, and with each recurrence of the same disease; and so on to end of time. The result of this selection cannot be foretold, it often fails totally, is practically never complete and whether complete or incomplete, there is absolutely no proof that the result would not have been the same if a drug had not been given at all, or if any other drug had been given. For the selection Hahnemann's law makes mandatory a certain concurrence of the symptoms of the disease and the symptoms of the drug. The symptoms are both objective, and subjective and the objective symptoms include what is known as pathology. Therefore, the concurrence should include both purity (subjective symptoms) and completeness (pathological ones); then the completeness of the agreement, or concurrence, depends upon whether the drug causes a pathology similar to or like the disease. That it does not, so far as we now know, makes the concurrence incomplete, and to depend largely upon a subjective symptomatic resemblance, rather than on this plus and objective one, and for this reason the completeness of the agreement has to be dispensed with as being, in the main, unattainable. It is just this inability, combined with clinical experience, to secure objective as well as subjective similarity, or completeness as well as purity, that casts the greatest doubt upon Hahnemann's

dogma of a natural law of cure, or prescribes in limitation, which is equivalent to the same thing. And it is this evidence, confirmed by clinical experience, to use a figure of speech, that the effects of drugs fail to follow diseases into their lair, that is responsible for the drug therapeutic skepticism of the older school.

The purity (and completeness) of this concurrence is absolutely dependent upon the four following factors, proximate and remote : 1st, the exhaustiveness, purity reliability and accuracy of the symptomatology of the provings ; 2nd, the individual education, experience and judgment of the person or persons conducting and recording the provings ; 3rd, the purity, completeness, reliability and accuracy of the symptoms of the patient to be prescribed for ; 4th, the individual education, experience and judgment of the physician who is to make the prescription. Practically all four of these factors are dependent upon purely human testimony, which is more or less unstable, present and past, liable to the individual liability to error in the education, experience and judgment of provers, recorders, patient and prescriber. These four factors are inseparably interwoven into the fundamental basis of Hahnemann's law. They do not, nor can they be made to, comply with the requirements implied by the word "scientific." Among them all, as they are used in accordance with the requirements of Hahnemann's law, there is not one to which the requirements of an exact science can be wholly applied.

1st. The provings, rarely complete and often fragmentary, are from both sexes, at all ages, with little consideration of the mentality, temperament, education, experience, judgment or physical condition of the prover ; under any circumstances, by various preparations and all sizes of dose ; with and without preliminary records ; they have been collected from various sources at different intervals of time ; from them nothing has ever been discarded as being unworthy ; they have been compositively recorded indiscriminately ; and drug, disease and personal symptoms have often been mixed.

2nd. The conducting and recording of the provings are seldom by one person; seldom the prover himself; they are by persons of unstandardized education, experience and judgment; and who are wholly free to exercise individual bias and prejudice.

3rd. The patient of either sex and of any age; from slightly sick to desperately ill; of any social state, degree of education, intelligence and experience; facile or stupid; and whose symptoms are of most complex character, cause or origin.

4th. The prescriber, a physician, of all degrees of education, experience and judgment; he has acquired his pictures of drug symptomatology rarely from personal experience or from the day books of the provers; from a cyclopedia; handbook; epitome; key notes; spoken and published lectures; etc., etc., or something from any or all of these or similar sources. He cannot experimentally reproduce the effects of drugs at will for his own purpose of verification or rejection, but must take them as he finds them, tinted and tainted by the many minds through which they have filtered before reaching his own.

Psychology can teach us much regarding the liability to error of purely human testimony, even when uttered with the best intention, owing to the impossibility of agreement regarding reactions to stimuli which characterize the individual human personality. Extraordinary differences regarding details can occur from the "variations of memory and attention, feeling and imagination, perception and discrimination, judgment and suggestion, and volition;" the power of suggestion in destroying memory, and the part played by the different temperaments have a great influence in perverting facts. All this does not apply to the prover of drugs alone, but to the patient for whom they are prescribed, as well as to the interpretation of the provings by the recorder or conductor of them; and, finally to the physician making use of them in prescribing, and still more important is their influence upon his judgment regarding the results following his prescription. The absence of a standardized terminology for human reactions to stimuli; of several provers under like conditions and under the influence of the same drug, the necessity



of accepting at their face value each individual's own interpretation of his own sensations, and even laying special stress upon them when they depart from a standard established by the others; the absence of authority, and even its practical forbidding, to harmonize, or reduce to a common meaning reactions to drug stimuli; and the fact that much human knowledge and experience can lie buried in the sub-conscious, until either accident or design thrusts it into the conscious mind, all tends to complicate the production and use of a symptomatology compiled according to Hahnemann's ideal and no amount of human foresight and care can make it absolutely accurate. Though much might be done by selected provers and trained examiners, where will be found the selected prescriber, and where will he find the selected patient. However, no future proving should be undertaken without serious attention to certain elementary psychological facts; and instead of reproving, it might be well to inquire whether the old ones could be profitably reviewed and simplified in the light of modern experimental psychology.

In order to make clearer what is meant by purely human testimony and its liability to error, I cite one of a number of experiments conducted by a psychologist with his class at Harvard University. I purpose select the special sense of hearing, because of the probability that conscious attention is more closely allied with this special sense than with any of the others, and because it is the avenue of conduction of the greatest number of stimuli linked with man's intellectual life. (Sensations originating from within owing to the want of associations and the influence of suggestion and expectancy, are probably the most difficult to determine accurately. Witness the common inability of an intelligent patient to find terms in which to express the characteristics of a simple cough which he not only experiences but hears as well). The experiments were made on several hundred students, ranging from 20 to 23 years of age. They were asked, without theoretical introduction, to write down careful answers to a number of questions. The report refers to the first hundred papers taken up at random. To use

the experimenter's own language, "In my next test I asked the class to describe the sound they would first hear and to say from what source it came. I struck with a little hammer below the desk, invisible to the students. Among the hundred students whose papers I examined for this record were only two who recognized it as a tuning-fork. All other judgments took it for a bell, or an organ-pipe, or a brazen instrument, or a cello string, or a violin, and so on. Or they compared it with such different noises as the growl of a lion, a steam whistle, a fog-horn, a fly wheel, a human song, and what not. The description, on the other hand, called it soft, mellow, humming, deep, dull, solemn, resonant, penetrating, full, rumbling, clear, low; but then again, rough, sharp, whistling, and so on." The results of all the other tests were equally confusing. ("On the Witness Stand." By Hugo Munsterberg).

On account of being committed to Hahnemann's dogma, and the peculiar character of this undigested and incomplete, first, second and third hand knowledge contained in the homœopathic materia medica for its fulfilment; its necessarily habitual use in repertories, or the memorizing and sorting it in bulk, with its limitless associations and conditions of character, location, direction, time, aggravation and amelioration, contrasts, comparisons, etc., etc., it imposes a habit on the mind, on the one hand, or a burden, on the other, coming as it does in its formative period, all which undoubtedly everts a subtle and unconscious, but nevertheless, potent, influence in hindering the development of its finest quality—that of original and creative thought; because the character of this knowledge (if we are to strictly follow the requirements of Hahnemann's law) does not admit of its being assimilated, its principles incorporated and its details discarded, as is the natural function and habit of the normal mind regarding practically all other forms of human knowledge. Much that is otherwise obscure is made plain in connection with this suggestion. On this account alone it would be worthy of the most serious consideration, whether a more rational view, regarding the natural limitations of the power of drugs as strictly

curative agents in disease, and a more rational view of what Hahnemann's law is based on, and its normal place in drug therapeutics, would not deliver the mind of much of this burden and leave it free to develop along more progressive lines.

As it is, all this is, of course, unavoidable, because it is exactly what the abstract quality (and the spirit in which it is accepted) of Hahnemann's law makes necessary. And little wonder that the reactionary carefully avoids discussing its fundamental facts on the basis of the evidence it can itself adduce, and endeavours to create and stimulate the belief in its scientific foundation as nature's law of cure by examples borrowed from other therapeutic methods and procedures, and from the pure sciences, regarding the properties of matter.

In raising the question whether this so-called law is nothing more than a systematic empiric principle, or is a veritable law of nature, the reaction in very many minds is that it is of no practical importance; that it is a purely academic question; or that it is as well to leave it to posterity to settle. There is failure to realize, or the fact is ignored, that conditions have already arisen and prevail which make this a burning question in regard to the intellectual progress and status of the school itself; it bears heavily on its future relation to the art and science of medicine in general; and on the morality of the present propaganda; on the cherished ambitions of the school regarding its future status; as well as on certain contemplated enterprises, notably, the re-proving of the *materia medica*, which the recent belladonna proving inaugurated. There is abundant reason for the discussion of each of these factors, did time and space permit.

As the belladonna proving exists, a word or two concerning it. The first striking feature of this proving is the absence of any evidence of critical analysis with the view of excluding everything not above suspicion. The only difference between this and former provings is the preliminary health records, and the examination of the provers by physicians and specialists before, during and after the proving. Without knowing the condition of the whole proving regarding this scientific oversight,

it can be said regarding one section—that of the blood, which is absolutely free from the influence of the personal equation of either the prover or the examiner, being purely a matter of scientific technic—that not one word concerning it should have been admitted for record. Whether the same is applicable to other parts of the proving or not, it shows, unequivocally, that something more than mere supervision by specialists is necessary to scientific accuracy. There is no doubt that this proving is of no more value as a working theory than its predecessors, and in one respect, at least, it is probably worse, because the stamp of science is placed on a work that is tarnished by the personal equation of the individual examiners, their want of experience in this kind of work, and by the fact that the proving was undertaken at the behest of an idea having no actual existence. Regarding its disposition, it is fair to say, that nobody knows just what to do with it. To have it supersede the old proving is not to be thought of; its failure as a pure work of science deprives it of any supplementary value; and to combine them, the only logical procedure, would only intensify conditions already intolerable, with no corresponding compensation. Inaugurated as an experimental work, it is even worthless as an object lesson, for the simple reason that it was undertaken simultaneously by ten different sets of workers without individual inspiration and regardless of training, at ten different places; whereas, if the work had been undertaken in succession, at the very least, each one in turn might have been able to profit by the successes or failures and mistakes of those who had preceded them.

The truth is, the law is Hahnemann's, and he makes it his by the creation of the details of the art for its application; and the fact that until now no material progress has been made in its application, and that the adoption of his dogma by many minds has resulted far more in its corruption than in its refinement and progress, should be ample evidence of its fundamental character. The opinion may be freely ventured that the scientific proving or testing of drugs will in no way forward Hahnemann's

law, not alone because the law has no scientific basis, but because it would only tend to make more and more apparent the natural limitations of drugs as strictly curative agents in the treatment of disease. It is highly probable, in spite of our imperfect knowledge, and unscientific and more or less empiric, applications, that drugs already all, or nearly all, of their therapeutic qualities. This prediction yield finds support in the history of drug therapeutics from all sources, and the present tendency to seek relief in measures of all characters more closely allied to nature. And witness, in homœopathy, the often wide application of unproven drugs, or those with most fragmentary ones, the little use of others with voluminous symptomatologies, and the practical absence of any additional use for the new belladonna proving.

#### DRUG THERAPEUTIC SKEPTICISM.

In his American Institute presidential address for 1908, under the sub-heading of "The Hopelessness of Allopathy," Copeland protests against the present trend of old school drug therapeutics, and he quotes from an address of Sir Dyce Duckworth in support of his protest. The following sentence occurs in the quotation, and is the substance of it. "Our knowledge of the materia medica has declined out of all proportion to that gained by the progress of bacteriology, which claims to supersede all other therapeutical art." This sentence undoubtedly expresses the thought it was intended to embody, but, otherwise, it is absolutely "undigested, and should be a warning not to lay too much stress upon names bearing authority. It obviously lays the burden of the present drug therapeutic skepticism upon the science of bacteriology, and in that Copeland concurs.

Bacteriology is not a therapeutic art, and, so far as a therapeutics has been based upon it, it has been limited to the therapeutic application of each variety of bacteria, or a product of it, to the disease it has been shown to be the active factor in causing, and for this reason alone bacteriology cannot claim to supersede all other therapeutical art. Furthermore, our knowledge of the materia medica has not declined, but may truly be said to have

failed to progress, in a basic fundamental sense, out of all proportion to the progress of science in other departments of medicine. And right here is the foundation and origin of the present drug therapeutic "hopelessness of allopathy," and, perhaps, in some degree of homœopathy also. This so-called "hopelessness" is not absolute, but relative, and it pertains almost alone to the fundamental utility of drugs as strictly curative agents; owing to their not (yet?) having produced a pathology, in the sense in which pathology is known in disease; to the marked difference in their etiology, expressed in the unconditional effects of drugs on all persons, in striking contrast to the apparent necessity for predisposing factors in the case of disease; to the ephemeral action of drugs, the unequal effects of the same dose at different ages, and at all ages from unequal doses, in contrast to the natural or spontaneous duration, the progression, or the natural self-limitation, definite course or changing features characteristic of disease. It is, perhaps, rather this absence of all relationship, the unlikeness, dissimilarity, or absence of a basic similarity (not used in a homœopathic sense), between the effects of drugs and the effects of disease (in marked contrast to their symptomatic similarity or contrariety), which has become more and more apparent with the growth of a more fundamental knowledge of disease itself and its causes (rather than of its symptoms), that has given rise to the drug therapeutic doubt.

It is important to realize that loss of faith in the efficacy of drugs for the cure of disease does not prevail in the rank or file of either school, but the reverse. While the thought is almost exclusively confined to the dominant school, it is almost exclusively confined to certain advanced thinkers in that school and their pupils.

Regarding what immediately follows, understand that I am referring to the so-called regular school. It should be also remembered that this school, as it stands to-day, is committed to no dogma regarding the action of drugs in the cure of disease, and that a distinction should be drawn between the mere treatment of patients with drugs and the cure of disease thereby. There has been nothing in the accumulating knowledge regarding the etiology, pathology and the natural history of disease, and the more slowly growing knowledge of the action of drugs, which has tended in the slightest degree to inspire a deeper faith in drugs as strictly curative agents in disease, but rather the reverse, owing to the fact that the greater and more fundamental the knowledge of each the more apparent becomes the absence of a basic idea or natural relation between the two on which to base a therapeutic faith.

Time was when the name of a disease was associated in the mind primarily with its symptoms. Consumption was a wasting disease, characterized by fever, sweats, emaciation, cough and expectoration; to-day it is thought of as tuberculosis, associated in the mind with various manifestations and a corresponding variety of symptoms. Chill, fever, sweat is no longer associated in the mind with the word malaria; but quite independent of its symptoms, to-day, the word malaria is associated in the mind with the invasion of the red blood corpuscles by a specific micro-organism, of which there are several varieties and corresponding sets of symptoms; and the complex of symptoms, chill, fever and sweat may as well be a manifestation of any one of several infections. Therefore, the idea of the action of drugs ordinarily expressed in terms of symptoms, is coming to be less and less associated with the idea of a specific disease; because the idea of a disease is coming to be less and less expressed in terms of symptoms, and more and more in terms descriptive of its pathological fundamental nature. From this there is resulting a disassociation of the older idea of the symptomatic relationship of drugs and disease per se, and a fuller realization of the absence of any basic or fundamental quality in the action of drugs with which to associate the idea of a strictly curative relationship, and hence the involuntary, and therefore, unavoidable and healthy, skepticism which has resulted in the terms of opprobrium of "drug therapeutic nihilism" and "the hopelessness of allopathy."

On this account, the present doubt regarding the strictly curative action of drugs should not be regarded as an ephemeral fad or fashion, but as a natural psychological state, brought about more or less involuntarily by the present status of the knowledge regarding the nature of disease and the effects of drugs. It may not be permanent, but so far as concerns certain minds at present, it is an established fact. I have attempted to point out in other papers the incompatibility of the association of the idea of a natural homœopathic law of cure with the simultaneous acceptance of the present idea of the nature of disease and the condition of drug action, without the actual existence of an intellectual confusion regarding the real significance of Hahnemann's law. It is more than probable that a complete comprehension of this so-called law, by the homœopathic school, would place it in a position to take advantage of any change regarding the present outlook of drug therapeutics should such occur.

Therefore, the present drift of drug therapeutic ideas leaves to the thoughtful and cultured physician little or no faith in the fundamental utility of drugs outside of certain specific effects and physiologic (symptomatic) applications; palliation by anodynes

and sedatives; so-called somatic, tonic or stimulating effect; and the "ever narrowing field of drug administration," namely, purely symptomatic treatment of the rank and file of patients by drugs, more and less empiric. It is here homœopathy essentially found its place, and it is here it finds its present usefulness, and will continue to find usefulness as long as drugs are used in the treatment of disease. It is here that the future treatment of disease by drugs will continue to find its greatest field, it may be, and is even probable, that there will be a reaction in the direction of more refined methods in the selection, as there has been in the administration of drugs. It may even recognize the value of the subjective sensation of provers as suggestions for clinical use, as well as the objective ones, mainly explained by physiology; and even embrace the principle of similarity, mainly because there is no other principle which will serve the same purpose, and from which such far reaching inferences can be made. But even this would be far from recognizing or confirming Hahnemann's law. The principle of similarity is a manifestation of nature, the dogma that it is a law of nature for the cure of disease is Hahnemann's, and adherence to this dogma can only retard the consummation of the more general recognition of the principle it misrepresents. The mistakes of homœopathy have not been mistakes of treatment per se, but mistakes in treatment based on errors of diagnosis for which Hahnemann's dogma has been directly responsible, because it has created an unjustified and overweening faith in the power of drugs to cure disease.

#### "THE REDISCOVERY OF HOMŒOPATHY."

In Copeland's presidential address, previously referred to, he eulogizes Wright as the rediscoverer of homœopathy. It is something of a confession for homœopathy to admit, after a century's experience, that it has left unexplored avenues by which it may be rediscovered, or is the reason for the rediscovery father to the thought? Somewhat earlier in this address, "The Reason for Therapeutic Failure" of the other school is attributed to the worship of the laboratory, and I quote from it two sentences: "It is of no interest to the patient to be assured that this or that germ is the cause of his trouble, that this or that pathological change has occurred in his tissues. What we want to know is, what will cure him." Now a quotation from his eulogy of Wright. (Wright's work is, of course, laboratory and bacteriological.) "Taking minute quantities of the toxins, capable of producing symptoms similar to those produced by the germs (?) he was able to cure the lesion produced thereby. Not only did Wright rediscover the law of similars, but also, strange as it may seem, he hit upon the century old conclusion as regards



the size of the dose." Again, "The hopelessness of allopathy" is distinctly blamed on the science of bacteriology; yet the therapeutic applications based upon this science are claimed as a rediscovery, confirmation and amplification of the homœopathic law. One would naturally suppose from all this that the school making these applications had well started on a full homœopathic career, instead of being a hopeless therapeutic nihilist.

With no more consistency can Wright be said to have rediscovered homœopathy with his opsonic index as an indication for treatment, than Koch with his tuberculin, Behring with his anti-toxin, Pasteur with his treatment of rabies, Flexner with his anti-meningitis serum. They are all chips from the same block, and none of them are homœopathy—or all of them are—and least of all the homœopathy of Hahnemann's law. Yet, in the same address, Copeland states "his conviction that von Behring's gift to humanity is of inestimable value. However, he wishes, in the same breath, to declare that the effect cannot be explained as dynamic or therapeutic, in the true sense, but is simply a wise use of chemistry as elementary as the administration of an alkali to neutralize and acid."

Let us assume, hypothetically, that the pneumococcus (or any other pathogenic organism,) or some product of it is a remedy for the cure or prevention of pneumonia, in keeping with the theories and practical laboratory work of Koch, Pasteur, Wright, and others; and that this constitutes it a homœopathic remedy according to the claims of the homœopathic school; in other words that this is the homœopathy of Hahnemann's law. Consistency demands that this claim be carried to its logical conclusion from a purely homœopathic standpoint, inasmuch as the pneumococcus is the cause of pneumonia, and pneumonia has a symptomatology, general as well as pathognomonic, following the imperative mandate of Hahnemann's law, the pneumococcus is no more positively the remedy for the cure of pneumonia than for any other disease, the symptoms of which can be found among its symptomatology more characteristically than elsewhere. If all the symptoms—every symptom regardless of degree, kind or location, as is the practice in the homœopathic school in making provings—from an average number of cases having had pneumococcus pneumonia, were recorded according to the Hahnemannian scheme as the working symptomatology of the pneumococcus, or its product, as a homœopathic remedy for the treatment and cure of disease at large in competition with other homœopathic remedies, then we would have a strong analogy, but not a parallel to the Hahnemannian idea of a homœopathic application and a remedy.

I say analogy and not a parallel because this pathogenic mi-

cro-organism, or its product, from a Hahnemannian standpoint, could not be the remedy for any individual case of pneumonia, unless the symptomatology of that particular case was found among the symptomatology more characteristically than among the symptomatology of any other drug. In other words, so far as the treatment of pneumonia is concerned, as of any other disease, it would be only entitled to enter into competition with other remedies; yet, it would still stand in a natural and positive relation to the specific disease it causes; while the homœopathic remedy in general stands in no such relation to any pathologic or nosologic entity, as is the case with the pneumococcus to all other human ailments save pneumonia. In no essential is the mandate of Hahnemann's law more emphatic than in regard to the superiority of purely symptomatic correspondence over that of a purely pathologic one. The most superficial observer cannot fail to see, from the standpoint of what is termed in a general way serum therapy, based on natural law, that there is no option or liberty regarding the restrictions of its application according to the nature of the individual serum; while with Hahnemann's law it is impossible to define the limitations of its application on any natural basis. The former is as truly the treatment of a disease, regardless of any other consideration, as the latter is the treatment of a patient, regardless of any other consideration.

#### INDIFFERENCE, INTELLECTUAL CONFUSION AND LOOSE PHRASEOLOGY.

In order to arouse an interest in this question it seems necessary to do something more than demonstrate its importance. There seems to be, on the part of those in the school best qualified to settle it, an inherent disinclination to have it brought forward. It cannot be smothered by a mutual understanding to ignore it. It will arise in the minds of many, more and more frequently and more and more insistently, because the conditions now exist in their full perfection in the intellectual status of medicine at large, and which medical men of all schools are inhibiting, which make it necessary for the homœopathic school to quit its attitude of indifference, to reform its phraseology, abandon its theologic habit of mind and square its theory and dogma with the actual facts of its practice. Emotionalism and sentiment have no place in the art and science of medicine. As showing more graphically than anything, I can say, the intellectual confusion in the homœopathic school regarding the idea of which homœopathy is based I quote a number of sentences, detached from their context, from a special address on "Homœopathy: What it is," etc., delivered before the American Institute of Homœopathy in June,

1907. That this intellectual confusion is not peculiar to the author of the address is evidenced by the fact that the address was ordered to be printed separately and distributed at large by that body. To free myself from the imputation of captious criticism of the author, I say, parenthetically, that I believe him to be not only representative of what is best in homœopathy, but what is best in medicine—than which I can pay him no higher compliment.

The quotations follow, but the italics are mine.

*"It (homœopathy) is a guiding therapeutic rule : a principle which, within its sphere of action is as constant and immutable as are nature's law everywhere."* *"Homœopathy is a method of practice."* *"Whether or not this formula (s. s. curentur or s. s. curantur) is a statement of law, or a guiding rule ; whether, if a law, this law be universal and unlimited in its activities ; these things, after all, matter little."* *"Homœopathy is in its simplest definition and in its final analysis,——that likes can be cured by likes."* *"Is this not a daring statement—rather a lofty promise—that your rule of practice is founded on a law of nature? How do we know it to be a law of nature? We know it to be such a law exactly as any scientist knows his working rule to be founded on a law of nature ; by patient and exact experimentation and by the reiterated exact results obtained (?)." "Homœopathy is established from the laboratory (?)." ("The sins of the fathers are visited unto the third and fourth generations.") "Totality of the symptoms', means a pathological grasp of a case, as complete as the pathogenetic grasp of its possible remedies should be." A little further on : *"Homœopathy has taught the uselessness of pathological classification in therapeutics."* *"(Every therapeutic resource outside of the ever narrowing field of drug administration, belongs quite as much to the homœopathist as to any of his professional brethren.)"* *"What is homœopathy? It is the administration of drugs to the sick under a scientifically demonstrable law of nature."* *"The lamp of an immutable, guiding law of therapeutics."* *"That lamp lifted to the height of the tower of science, whose foundation rests on the rock of basic truth : Nature's law of similars."**

It is superfluous to attempt to analyze, criticise or comment upon these isolated statements. Suffice it to say, their extravagance is characteristic of homœopathic literature on this subject. They smack more of a theologic fervor than of critical analysis, and their very eloquence betrays their origin as being rather from the realms of emotion and sentiment than from those of judgment and reason.—*North American Journal of Homœopathy*, November 1909.

## EDITOR'S NOTES.

**A Metchnikoff Laboratory.**

The municipal council of St. Petersburg has decided to name the newly installed municipal laboratory after this great biologist; it will moreover found an annual prize of 1,000 rubles to be known as the Metchnikoff Prize and to be awarded for the best work in biology.—*Medical Times*, January, 1910.

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**The Three Distinguishing Marks of a Science.**

States Prof. F. Rolt-Wheeler, are: (1) It must observe with painstaking accuracy, and record these observations; (2) It must classify these observations and determine their relation to each other—which one of earlier and which of later formation, and what proportion of inter-relation exists; (3) It must explain these facts in such wise as to show the subject as a coherent whole, affording a place for all facts presently discovered or to be.—*Medical Times*, January, 1910.

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**A Man becoming Leonine.**

A patient exhibited recently before the Medical Association in Cincinnati presented a case of "leontiasis aossia;" only two or three such cases are on record. The head seems gradually to be losing its human characteristics and to be assuming those of a lion. During the last three years the bones of the skull (it is reported) have gradually enlarged, the eyes have retreated and the whole configuration has taken on the change indicated. It is feared this patient must soon become insane.—*Medical Times*,—January, 1910.

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**Radium Institute of America,**

This institute was formed for the purpose of making a thorough study of radium and to discover any radiferous deposits in the United States. In order to study the therapeutic value of radium the projectors of the society will purchase the requisite quantities of the substance in Europe and establish a clinic in connexion with some hospital and administer treatment free to those who require it. The officers are:—President: Professor Chandler, of the department of chemistry, Columbia University; Vice President: Dr. Robert Abbe, surgeon to St. Luke's Hospital; and Secretary: Professor Hallock, of the department of physics, Columbia University.—*The Lancet*, January, 1910.

### **Tuberculosis "Preventorium" for Children.**

This is the curious title of a hospital or sanatorium for the care and treatment of children suffering from tuberculosis who live in the crowded parts of cities. The establishment of this institution is due to the philanthropist, Nathan Straus, who has done so much to introduce pasteurised milk into New York and other cities for the benefit of children. The institution is located in the pine woods of Lakewood and was opened in May last, since which 92 boys and girls have been received. The improvement of these children has been remarkable, and it is now proposed to increase the capacity to 400.—The *Lancet*, January 1, 1910.

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### **Restrictions on the Importation of Eucaine.**

The Government of India has prohibited the bringing by sea or by land into British India of eucaine, beta-eucaine, lactate-eucaine, and holocaine by means of the post, and restricts importation of these articles by any other means to cases in which they are imported by persons, or by their authorised agents, who have been specially permitted to import these drugs by a local government or administration or by the Madras Board of Revenue.—The *Lancet*, January 1, 1910.

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### **Radium and Other Radio-active Substances.**

The Ministry of Public Works in Austria has recently been considering the question of the sale of radium to the public by the State and has fixed the price at which it is to be sold. Professor Francis Esner has found that 1 gramme of pure radium can be extracted from the crude material supplied from Joachimsthal, and this will be sold out in portions of 1 milligramme which will cost 380 kronen (£16). The State will therefore receive 380,000 kronen (£16,000) for the lot. Intending purchasers, including a great many hospitals and sanatoriums, have already come forward, and in supplying them applications from the Austrian dominions will have priority over those sent from abroad. In Joachimsthal further quantities of radium have been found, and chemical work has resulted in the discovery of additional radio-active elements.—The *Lancet*, January 1, 1910.

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### Medical Students at the University of Budapest.

According to the recently published calendar of the University of Budapest, the number of medical students has increased to 1688, of whom 60 were females. The medical faculty of this University is one of the best attended in Europe, being exceeded in point of numbers only by Paris and Munich.—*The Lancet*, January 1, 1910.

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### Malaria and Quinine.

There are two facts with regard to malaria and quinine which taken together, are very puzzling. The one fact is the demonstrated power that quinine possesses of destroying the malaria plasmodium in the blood. The other fact is that frequently, although the patient may have taken quinine in large doses and for long periods, the malarial parasite persists, and that this is not necessarily due to fresh infection is proved by those cases which, having contracted malaria in India or elsewhere, return to this country, and yet for a long time—it may be years—are subject to occasional attacks of malarial fever, and this although they are treated each time with large doses of quinine. An explanation may possibly be found in the faculty that all living organisms have of gradually adapting themselves to their environment, so that it is possible that a race of malarial parasites immune to quinine may be developed. Lieutenant-Colonel Leslie points out, in discussing this subject, that fresh-water amœbæ may be gradually habituated to salt water; that the infusorian *stentor* kept in a weak solution of corrosive sublimate becomes tolerant of a solution containing four times the quantity of this poison that is fatal to stentors taken from pure water; that trypanosomes frequently develop in an animal being dosed with atoxyl a race of trypanosomes that is immune to that drug, and these produce descendants in a new animal host which retain this immunity; and that races of colpidia have been obtained that could live in fairly strong solutions of quinine. However large a dose of quinine be taken, it cannot form a very strong solution of this drug in the blood, and it is quite possible that though the majority of the malarial parasites may succumb to it, yet in some cases a few of the hardier ones may survive and gradually develop an immunity to quinine. Treatment by quinine would then be useless.—*The British Homœopathic Review*, February 1910.

## CLINICAL RECORD.

## Foreign.

## A CASE OF DYSMENORRHOEA.

By T. G. STONHAM, M.D., LOND., M.R.C.S.

Miss W., aged 37, sent for me on July 2, 1909, on account of severe menstrual pain. She was very ill thirteen years ago with sub-diaphragmatic abscess and empyæma of the right side, was operated upon, and the abscess drained through the chest wall and through the abdomen below the liver, and after some weeks made an excellent recovery. With this exception she has enjoyed good health, except at her monthly periods, which from girlhood have always been painful, and sometimes the pain has been so severe as to cause fainting. She does not faint now, but the pain is agonizing, and makes her feel weak and prostrate for days afterwards. The last few months the pain has increased in severity. The bowels are regular, sometimes a little inclined to be relaxed at the "period." No leucorrhœa. The catamenia have the following character: They occur regularly, with preceding feelings, lasting for two or three days, of being out of sorts, languid, and weak, and some aching in the sacrum. The flow then commences without pain. After a few hours it stops, and at the same time severe pain comes on in the hypogastrium and lasts several hours till the flow recommences, when the pain lessens and soon ceases. The rest of the period is without pain, but there is a very sore feeling in the hypogastrium at its site. The pain seems to be in the uterus, as it is mostly in the hypogastrium in the middle line, though sometimes there is also a little pain to the right of this, sometimes to the left. It is fairly continuous, cramping, forcing and pressing down. There is no extension of pain to the thighs. The flow is thin, bright, fairly profuse, and lasts about a week.

When I saw her on July 2, she had had the pain for several hours, and the attack was probably nearing its close, though still very severe. I gave *sulph.* 2, a few drops in a tumblerful of water, a dessertspoonful every two hours. This was given on account of the well-known action of *sulphur* to meet the symptoms arising from suppressed discharges. It was given temporarily, but the case being such a long-standing one, it was considered advisable to repertorize it carefully.

July 3.—She had passed the night without pain, but was very sleepless; “too tired and exhausted to sleep”; keeps her bed. The reference to “Kent’ Repertory” had given the following result, taking only the drugs printed in heavy type and italics: Cramping pain in the uterus during menses: *asaf.*, *calc.*, *caust.*, *cocc.*, *coloc.*, *kali-c.* Pressing pain in the uterus during menses: *acon.*, *ant.-c.*, *BELL.*, *cocc.*, *lil.-t.*, *nat.-c.*, *nit.-ac.*, *plat.*, *puls.*, *sec.* Uterus sore during menses: *bry.*, *caust.*, *cocc.*, *con.*, *nux.-m.* Menses flow only in absence of pain: *cocc.* Menses intermittent: a number of drugs, amongst which *cocc.* appears, but not prominently. *Cocculous* was evidently the medicine indicated by the Repertory, and *cocc.* 3, pil. ii., night and morning, was ordered to be taken during the intervals between the “periods.”

August 24.—The last “period” was three days late (a very unusual occurrence). There was no intermittence in the flow, and yet the pain came on just as bad as before, and was of the same character. It, however, did not last so long, only for five hours. She was not so weak and prostrate after the “period,” which was itself of shorter duration. Since then she has been to the seaside for a fortnight and has come back in improved general health. Expects the catamenia next week. Has taken no medicine while away. Was ordered to take the *cocculus* regularly night and morning till the onset of the “period.”

September 8.—The last period was a very good one; very little pain, less profuse, and no intermittence. Repeat *cocc.* 3, pil. ii., n. and m.

October 6.—Writes: “I am away from home for a fortnight. The period is over again, and I am glad to be able to tell you that I had a very good time, hardly any pain, and I did not stay in bed at all. I have not had such a time for many months. I shall be glad if you will send me some more medicine; it is wonderful how much good it has done me. Repeat medicine.

October 24.—Another period just over. No pain at all.

January 5, 1910.—Subsequent periods have been without pain.

This seems to have been a case of spasmodic functional dysmenorrhœa. As she is a virgin, no vaginal examination was made, and the medicine was prescribed from the symptoms alone. There is, however, no probability of any organic disease being present, and the case must be regarded as a functional one. The pain which occurs in these cases



of spasmodic dysmenorrhœa is often extremely severe, and, as in this case, the patient may go on suffering every month for years. It is gratifying to know that the properly selected remedy will effect a cure and save the patient from such operations as dilating the cervix, which are often very ineffectual. The *British Homœopathic Review*, February, 1910.

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## CASES BY DR. FAVRE.

### I.

The patient was a lady who had passed the menopause three years previously : of middle height, dark complexion with a yellowish tint. She complained of a severe pain in the left shoulder joint much < first thing in the morning, preventing her from lifting even a light object. There was also pain during the day < movement of the arm, but less than in the early morning. She had suffered for fifteen months, and though the pain was at present affecting the left arm the right had previously been the seat of trouble, and had been swollen. For six months, however, the left shoulder joint had remained painful. *Sepia* 30, one dose daily for eight days, cured at once ; a few doses of *Sepia* 100 were given to consolidate the cure, and there was no return of pain.

### II.

A healthy girl of 18 was much troubled with eczema behind the ears. The skin was red and covered with a weeping eczema, which tended to spread on to the neck and cheek. Otherwise healthy, except for a tendency for the menses to come too soon. *Calc. Carb.* and *Graphites* caused a short amelioration, then the malady began to spread over the face and the scalp, with rounded scaly patches and less moisture. The right elbow joint also showed a patch in the fold. *Sepia* 30 cleared the whole up in five days and the patient remained well up to the time of reporting the case.

### III.

I regret that I have omitted to note the name of the doctor who reported this case. It is taken from one of the French Journals.

A woman of 31 consulted the physician on account of varicose ulcers on both legs, which had been present for four years. Various forms of treatment had brought temporary alleviation but no cure. For the last few months before her visit the ulcers had increased in size and become very painful. The pains were < night preventing

sleep. The patient's business necessitated much standing. An ulcer was found on each leg, one on the inner side of the left leg above the ankle, L-shaped,  $2\frac{1}{2}$  inches in its longest measurement; the other on the outer side of the right leg of a triangular shape, 2 inches in its greatest length. The surface was purplish, and the pus watery and foul. The skin all round was dry, brown and sensitive. *Clematis* 6 twice a day was given, and a local application of *Clematis*  $\phi$  20 drops in 100 grams of water. In ten days improvement was manifest: the ulcers were cleaner, the discharge no longer foul. Less pain, but a good deal of burning at night, in bed. *Sulphur* 30 for two days was given then *Clem. Vit.* 6 again. In a month the wounds were obviously healing with healthy granulations and the burning and pain were practically gone. In three and a half months healing was complete. *Clem. Vit.* was given nearly all the time. On one occasion *Nux V.* 30 for indigestion and constipation, and at the end of the time *Rhus. T.* 6 for a little eczema that appeared on the right leg. The patient never left her work, and the cure has remained complete till the date of reporting the case. The *Homœopathic World*, January 1, 1910.

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## Gleanings from Contemporary Literature.

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### LOOKING BACK ; A GLANCE FROM EMPIRICISM TO EXPERIMENT, FROM SUPERSTITION TO RESEARCH.

*Delivered before the Middlesex Hospital Medical Society on*

*"* Nov. 11th, 1909,

BY SIR HENRY MORRIS, BART., M.A., F.R.C.S. ENG.,

*Emeritus lecturer on surgery at the Middlesex hospital.*

GENTLEMEN,—When, through the honorary secretary, your society paid me the compliment a fortnight ago to ask me to give the opening address of the session, my mind reverted to the past, to the long age, and at once assumed the attitude of looking back.

I remembered that in my earliest days at the hospital, in the first years of the "seventies" in fact, I held the office which our chairman holds now, of President of the Middlesex Hospital Medical Society. I recalled with what satisfaction I learnt that this society, founded as it was in 1774, is one of the oldest of the medical societies in London, and I began to reflect upon the vast changes in medical opinion in professional knowledge and in curative science which have occurred not only since the birth of this society, but in the much shorter period since the time when I was President. And if I may state in five words the chief cause of those changes, I will make use of the expression of (I think it was) John Donne, a poet and divine in the reign of James I., and say that they are due to "*the sacred hunger of science.*" And if I were asked, "What kind of science?" I would answer, "Physical science which searches after truth by the method of experiment," that science which seeks for knowledge without first asking what direct or tangible benefit is likely to be derived from it. In the fields of research there is nothing to distinguish, at first sight, which are the profitable and which the unprofitable plots, like the interesting Babylonian landmark or boundary stone marked off the ownership of different plots of ground, and which you can now see in the British Museum. But though scientific research may start with no immediate purpose but its own, yet its hope is progress ; its creed, that "knowledge is power"; and its expectation that, without asking how, yet somehow its results will ultimately be beneficial to humanity.

Leslie Stephen, in his introduction to his work on "Utilitarians," has written : "The love of truth in the abstract is one of the weakest influences in human nature." Well ! Be it so. Still, "the sacred hunger of science" is keenly felt by many, and in some it would seem to be a necessity laid upon them, like the necessity to preach felt by St. Paul. And just as St. Paul exclaimed, "Yea, woe is unto me if I preach not the Gospel," so these eager investigators would in the same spirit cry out, "Yea, woe is unto us if we make not experiments."

It is by means of experiments which can be planned and controlled at the will of the explorer, and especially by experiments on living animals, that so many of the recent changes have been made in our views of the pathogenesis and diagnosis of disease, particularly of fevers and the infective diseases of wounds, as well as in our methods of treatment.

But I would not have you suppose that I regard research by experiment as of recent or modern date. It is not so, not even research by experiments on animals. Hippocrates was the first to lead medicine in the right track. He employed experiment as well as observation, and thereby succeeded in freeing medicine from the fantastic speculations of the pre-Socratic philosophers. He was, moreover, the fountain source or spring of the flowing stream of medical science whose course, however, was soon to be checked by the dialectical and rhetorical gyrations in the whirlpool of Greek philosophy, by the pitfalls of Galenic Aristotelianism, the shifting quicksands of Scholasticism, and the deadening and paludal morass of the Middle Ages; but it came bubbling out again as little rivulets into the sunshine of the Renaissance, acquired force and volume by the Reformation, and flowed onwards unchecked and in full stream through the smooth and level plains beyond the Revolution; there it is bounded only by the horizon, the clouds and darkness of which are steadily being pierced, dissolved, or made to recede by the penetrating rays of the lime-lights of modern methods of research.

Galen, notwithstanding the obstacles he raised, by his mistaken and misleading worship of Aristotle, to the progress of medicine for a period of nearly 1500 years, nevertheless asserted the importance of anatomy—though, unfortunately, he only knew anatomy through the dissection of animals and not of the human subject; and he was the parent of experimental physiology.

Towards the middle of the seventeenth century Descartes made great use of vivisection, and the recluses of Port Royal—some of the most learned philosophers and educationists of their time—resorted to dissection of living dogs and other animals to demonstrate the circulation of the blood; and were accused, possibly as unjustifiably as the scientists of to-day, of being indifferent to the cries of their victims.

In other departments of physical science recourse was had in the past centuries to experiments. Bacon, in his "Natural History," describes the importance of making experiments, and indicates a very large number. Pascal, about the year 1648, made most important and decisive experiments on the weight of air, experiments, which, according to Sir John Herschel, "tended more powerfully than anything else which had previously been done in science to confirm in the minds of men that disposition to experimental verification which had scarcely yet" (he was writing in 1830) "taken full and secure root."

Boyle, in the middle of the seventeenth century, instituted exact experiments into the relation between colour and heat, and thereby laid the foundation for the union of optics and thermotics; he also advanced the science of hydrostatics, and established chemistry on a real basis as a science capable of dealing with the organic world. Boyle constantly insisted on two fundamental principles—namely, (1) the importance of individual experiments; and (2) the comparative unimportance of the teaching of antiquity on physical science. He inherited, so to speak, these opinions from Bacon—"First to doubt, then to inquire, and then to discover." Boyle's propensity to doubt is evident throughout his writings, and he gave to his essay on crystals the title "Doubts and Experiments Touching the Curious Figures of Salts."

The determination to subordinate old notions to new inquiries was emphasised in Boyle's lifetime by the incorporation in 1662 of the Royal Society, which was formed with the avowed object of increasing knowledge by direct experiment. According to Dr. Paris ("Life of Sir Humphry Davy") the Charter states that the society was established for the improvement of natural science, and that this epithet *natural* was introduced in contra-distinction to *supernatural*, because at that period the arts of witchcraft and divination were very extensively encouraged.

In the eighteenth and nineteenth centuries experimental research was very rich in discoveries. Research by experiment has been enormously advanced and extended by chemistry, photography, the improvement in instruments, and other means. Animal chemistry has been of the greatest assistance to the physiologist and pathologist, as has the microtome to the histologist and embryologist, and the microscope to the biologist and bacteriologist.

The microscope was essential for experiment as well as for observation. By its aid it was ascertained that the organisation of vegetables is nearly as complicated as that of animals, that there is harmony between the animal and vegetable kingdoms, and a close relationship between the physiology of plants and animals. Without the microscope bacteriology would have been impossible, and some of the greatest developments of scientific research would never have been brought about, except by the help of microscopes of high powers. Though the microscope in its crudest form was invented so long ago as 1590, and was exhibited in London in 1620 by Drebbel, it was only by slow degrees that it reached its present state of perfection. Improvements are still in progress, and only the other day a demonstration of a new invention was given at the Academy of Science of Paris. It consists of photography by kinematograph, of microscopic images obtained by side-lights, which constitutes the ultra-microscope. By this combination of kinematograph, microscope, and side-lights, photographs are obtained showing microbes, so small as to be invisible to the eye under the ordinary illumination and microscope, moving in their natural surroundings. By magnifying,

the microbes of sleeping sickness are seen twisting about among the red cells of the blood, and are said to appear as large as eels.

Specialism, in spite of certain definite drawbacks, has unquestionably been another cause of advance in medical science. Medical science in common with industries and other branches of science, has made remarkable progress in accuracy, as well as in extent of knowledge, through the experience and investigations of those who have specialised in various departments.

In the past one of the great obstacles to the advance of medicine was the tenacity of unproven hypotheses. By experimental methods of research the truth or falsity of hypotheses is tested, in many instances very quickly, before they are either accepted as explanations of symptoms or put into practice in treatment. Experiment is like cross-examination—it unravels the essential from the unessential, the relevant from the irrelevant; it insists on direct answer to the question asked. By experiments properly controlled we obtain results on which we can reliably base opinion and form absolute beliefs. This certainty, this absolute belief, is a matter of the utmost importance to us in the practice of our profession. Our object in the treatment of disease is to act, and our desire is to act successfully. And this desire to act successfully is the keynote of all actions; it is one of the ultimate facts of human nature. But human nature, as James Fitz James Stephen states, is so constituted that all actions involve belief, and all successful action involves true belief; and to attain to true belief every source of error must be eliminated; every doubt or uncertainty removed.

In the exercise of our curative science we want our results to be as far as possible *certain*. The conditions necessary for unerring action are first to know what should be done, and second to have the mind to do it. We should like in all cases to be able to say with Hamlet :

“Seems, Madam ! Nay, it is. I know not seems.”

In respect to many diseases and injuries, the safeguards of experimental research have obtained for us this certainty, and we can put our treatment into practice with the full assurance that we are taking the direction of success, though, even so, of course, we cannot always command success, for the reason that we have to war against disease and death, and death we know is the lot of all :

“All that live must die,  
Passing through nature to eternity.”

But our deservedly high appreciation of experimental research must not dull our sense of the great value of clinical and post-mortem observation. The laboratories are so full of promise, such a land flowing with the milk and honey of prospective discoveries—far off it may be, but yet so rich—that there is some risk that they may monopolise attention. The wards and the post-mortem theatre also yield products, not a few and by no means unimportant or insignificant. The acute and minute

observation, quite apart from experiments, of trained clinicians and pathologists has resulted in the discovery of many facts of first-rate importance, and the generalisations therefrom have yielded sound and guiding principles of diagnosis and treatment. Thus have become famous the names of Morgagni and Rokitsansky, of Sydenham and Boerhaave, of Watson and Murchison, of Hilton and Paget, of Wilks and Gull, of De Morgan and Charles Moore, and many other.

Percussion and auscultation, the stethoscope and thermometer, the ophthalmoscope, the laryngoscope, and other instruments for illuminating parts and cavities of the body have increased the means and the efficiency of clinical examination and diagnosis.

The importance of developing the faculty of observing cannot be exaggerated. "Every medical student, every medical practitioner, can and ought to cultivate it. At all times and in all places it can be exercised ; whereas experimental research requires special and often elaborate conditions and equipment. Moreover, we all cannot give up the time from our particular lines of work which experimental research demands, and not everyone is endowed with the qualifications requisite to pursue it successfully ; so that many, the majority in fact, must be content to employ the knowledge acquired by the experimental work of others. Observation, it is true, compared with experiment, is very slow, and is like the crawl of the tortoise in contrast with the strides of the ostrich, but it improves with practice, ripens with age, and the coordination of collective observation increases experience and expedites conclusions.

"Experience is by industry achieved

And perfected by the swift course of time."

In my recent "Sir William Mitchell Banks" lecture I showed how the modern operations for cancer of the breast have been established by the careful observations of clinical phenomena, and of the facts of morbid anatomy, made in this hospital by Moore and De Morgan, and which have been confirmed quite recently by Mr. Handley.

Another illustration of the brilliant results of individual and collective observation is the discovery of the association of myxœdema with the loss of the thyroid gland, thence followed modifications in the operative treatment of the thyroid, and the prevention and cure of myxœdema by the administration of thyroid extract. I am, however, aware that these results connected with the thyroid are sometimes, but unjustly, claimed as a triumph exclusively of experimental research.

The enormous strides made by scientific researches afford reason to expect that the so-called systems of medicine such as those associated with the names of Hoffmann, Brown, Cullen, and others, each of which is based upon, the idea of finding an explanation for every form of disease, have vanished for all time.

At the present time, however, quackery is rife in Germany in the form of the "natural" treatment (*Naturheilkunde*), and in this country

and America in the form of Christian Science. We are much indebted to Mr. Stephen Paget for his instructive book and his recent address on Christian Science, but there is one aspect which he has not gone into, and on which it is impossible to speak without trespassing beyond the bounds within which it is usual to limit discussion on medical subjects ; yet it is with reference to this aspect that I crave your attention for some minutes. The teaching and practice of Christian Science ignore all the physical reality of sickness, set aside all the recognised means of curative science, and rely entirely on an appeal to "*the source of life, for more life.*" Its method is to call on the Divine Spirit by means of concentrated thinking, and by thus drawing upon "spiritual force" to remove an *idea of disease*, the disease itself being said to have no actual or real existence.

In theory Christian Science healing differs from Faith healing in this : Faith healers do not doubt the reality of disease and suffering, but believe that the Spiritual and Divine force neutralises and counteracts them ; whereas the Christian Scientists deny entirely the existence of a body or of pain and sickness, and profess to call down the Divine influence to overcome a false idea—a misimpression. Like the saints of old, Mrs. Eddy and her followers claim the true source [of their cures to be the direct action of God. Such a claim, if not put forward in so many words, is *de facto* a claim to be able to work miracles, and none the less so because they talk and write in psychological manner of the "power of an idea" and the "annihilation of an illusion." A miracle is defined as a plain and manifest exercise by the agency of man (including prayer and contemplation under the term agency), or by God at the call of man, of those powers which belong only to the Creator and Lord of Nature. I purposely omit from this definition any reference to *signality*. The reason for considering miracles as signs is based on the Greek word *onuciov*, of which "miracle" is the ordinary translation, and from which the word semeiology, meaning a knowledge of the signs and symptoms of disease, is derived.

The Christian Scientist cannot get away from the fact that, on his own showing, he thus attempts to work miracles. It is to the purpose therefore to criticise the "cult" from this point of view. The miracles of which we have authentic record are (1) those of the New Testament ; (2) those of the Old Testament ; and (3) the miracles of the Early Christian Church—the so-called ecclesiastical miracles. The miracles attributed to the Roman Emperor Vespasian are no doubt pure fabrications and Mahomed's miracles read like sleight of hand and jugglery.

The miracles of the New Testament were performed (a) by Christ himself ; (b) by the Apostles ; and (c) by the Disciples. There is no difficulty in showing that Christian Science departs in four important particulars from the miracle working described in the New Testament. The points of difference I refer to are that the Christian Scientist (1.)



requires faith or self-confidence in the patient ; (2) attributes therefore insufficient importance to the faith or "mental concentration" of the healer himself or herself ; (3) refuses to employ any physical means of treatment ; and (4) is unable to perform certain acts which we are explicitly told, could be done by those who worked miracles under the Christian dispensation.

Many of the New Testament miracles were those of *healing* ; those of the women cured of an issue of blood, the leper cleansed of his leprosy, and the blind men restored to sight by mere touch, were performed by Christ himself on persons who were told their faith had made them whole ; those of the widow's son, Jairus' daughter, and the son of "one of the multitude" seen after the transfiguration were wrought by Christ through the faith of the parents of the afflicted. The centurion's servant was cured of the palsy through the faith of the centurion, which was said to have been greater than any which had been found even in Israel.

I. In neither of these four last-named cases was there any cooperation on the part of the individuals restored to health. In the performance of the miracles wrought upon them they were purely passive agents. Christian Science, on the other hand, requires an effort of contemplation or mental concentration of will power, or of faith, on the part of the patient to be cured. She cannot, however, appeal to the New Testament for support of this teaching, for besides the instances of the substitution of the faith of another for that of the person who was the subject of the miracle, there were other miracles in which there was no such substitution. Neither the man blind from his birth, nor the nine lepers, nor the man with the legion of devils, are stated to have exhibited faith by prayer or otherwise before or during the accomplishment of the miracle. Nor did any other person, do so on their behalf. In the case of the cripple of Lystra, St. Paul, "steadfastly beholding him and perceiving that he had faith to be healed," cured him. The cripple had heard Paul speak, but he had made no appeal or sign or personal effort to be healed. St. Peter healed the lame man at the gate of the Temple, cured Æneas of Lydda of palsy, and restored Dorcas, *alias* Tabitha of Joppa, to life ; but there was no cooperation on the part of those treated. The miracles of Philip and Stephen testify apparently to the same fact, for being "full of faith and power" themselves, they "did great wonders and miracles among the people."

Thus, though Christian Scientists are able to refer in support of their own method of "absent treatment" or *healing in absentia* to the single instance of the centurion's servant, there are many cases recorded in which there was no cooperation or participation in thought concentration on the part of the patients themselves. Is it not therefore effrontery on their part to ascribe their failures to the patients' defective capability of thinking, or deficient force of will, or want of faith ?

II. In the cures which were wrought by the Apostles and Disciples the faith of the active agent (i.e., the Apostle or Disciple) was of primary importance—in fact an essential factor for the healing. When an explanation was sought of the failure of the Disciples to cure the epileptic and lunatic boy, the reply was, their unbelief. On the other hand, the 70 disciples who were sent, two and two, into every city and place, were believers. They returned from their journeyings with joy, proclaiming "Even the devils are subject unto us through thy name." Further, there is the reply to the Apostles about the grain of mustard seed and the sycamine tree, when they asked "Increase our faith." Is not the correct argument from analogy, therefore, that when the Christian Scientists fail it is on account of their own deficiencies—of their own lack of power?

III. Nor can they justify by New Testament teaching their own rejection of every kind of physical aid in their treatment of the sick. In the case of the man blind from his birth, Christ made clay with his spittle, and after anointing the eyes of the blind man with the clay, sent him to wash in the pool of Siloam. Repeated stress is, in the narrative, laid on the clay and the washing. Again, we are told "God wrought special miracles by the hand of Paul, so that from his body were brought unto the sick handkerchiefs or aprons, and the diseases departed from them, and the evil spirits went out of them."

IV. It has been held that the power of working miracles was transmitted to the Apostles and Disciples in such a manner that it came necessarily to an end on the death of the last of the Apostles. If they dispute this, are the Christian Scientists prepared to base their self-confidence as healers on the only passage in the Bible which it is said gives any support to the idea that miracles are in these days performed, and have been possible throughout all the ages of the Christian Church? The passage is, "And these signs shall follow them that believe. In my name shall they cast out devils; they shall speak with new tongues; they shall take up serpents; and if they drink any deadly thing it shall not hurt them; and they shall lay hands on the sick, and they shall recover."

If the laying on of hands is part of the healing, how do the Christian Scientists justify their attempts on patients at a distance; And why do they restrict themselves to the exercise of the healing power only, and disregard all the other endowments specified in the text? Do they speak with new tongues? Could they take up serpents or drink deadly things and yet remain unharmed? Would they take, say, concentrated laurel-water instead of claret for dinner, or eat aconite root instead of horse-radish with roast beef? Why do they not give demonstrations in their churches or temples of the impunity with which they can manipulate venomous snakes and serpents?

When St. Paul, after escaping drowning from shipwreck, was being

kindly entertained by the inhabitants of Malta, a viper came out of a bundle of sticks and clung to his hand. The people at once supposed he was a murderer, and that vengeance had overtaken him in spite of his escape from the sea. But when he shook the beast off into the fire and suffered no harm the people changed their minds and thought he was a god. Why do not the Christian Scientists increase the evidences of their power, and improve the estimation in which they are held, by showing in the manner of St. Paul how unmerited are the imputations of manslaughter against them ?

It was foretold that sorcerers and false prophets would arise who would declare signs and wonders, inasmuch that if it were possible they would deceive the very elect. Was Christian Science included in this anticipation ? When in 56 A.D. the seven sons of Sceva, the Jew of Ephesus, and other, "vagabond Jews and exorcists" made trial of their power of healing, the evil spirit answered them by saying, "Jesus I know, and Paul I know, but who are ye ?" And then the man in whom the evil spirit was leaped on Sceva's sons and overcame them, and prevailed against them so that "they fled out of the house naked and wounded." There are not a few persons who, knowing the fatal consequences attending the practice of the Christian Scientists would witness without disturbance to their bowels of compassion the advent of a spirit which would chastise those presumptuous persons as Sceva's sons were treated.

The Pharaoh of 3400 years ago called together the wise men, the sorcerers, and the magicians of Egypt, to practise their enchantments and to cast down every man his rod, and they became serpents. But the rod of Aaron swallowed up the rods of all of them. Would it be altogether a misfortune if modern science or public spirit, or both, like Aaron's rod, would swallow up the disciples of Mrs. Eddy ?

It was commanded in old time to forbid no man to do miracles in the name of the Master, nor would we quarrel with the Christian Scientists for trying their minds on miracles if they did no harm to others thereby. Our repugnance to their presumption is because they mislead the credulous, the ignorant, and the helpless into supposing that miracles will be wrought at their instigation, and thereby persuade, if they do not indeed enforce, their victims to neglect every physical means for their recovery. We are not concerned as medical men with the metaphysics of Christian Science. What we resent is the effect of their teaching and practice in cases of organic and infective diseases, and in severe surgical injuries. It is because of their meddling with medicine, not their muddling, with metaphysics, that our profession, in the interest of sufferers and in the interest also of the general public, opposes their false doctrine and cries out against their cruel and fatal practice.

The miracles of the old Testament formed part of the Theocratic government of the Jews, and were wrought for the purpose of impres-

sing an ignorant and semi-barbarous people with the idea of the power of the Deity. To us the striking feature about many of them is the thinness of their veil of the marvellous. As miracles they seem beggared of the miraculous. They were, however, quite sufficient to terrify and excite the wonder of a semi-civilised race whose simple rudiments of learning made them as "children" in the condition of "slaves." For instance, Samuel called to the Deity for thunder and rain during wheat harvest so that the people might realise their wickedness ; and the thunder and the rain came. This brings back to my thoughts a circumstance related, I think, in "She," or some other book by Rider Haggard. Some one, knowing that an eclipse of the sun was due on a particular date, saved himself from being put to death by publicly foretelling the approaching darkness, and thus leading the natives to fear him as a god or a prophet. There are many nowadays who foretell, like Samuel, what the weather is going to be ; such predictions are a part of the news supplied to us by the daily and weekly press. Besides, we offer prayers in churches still for sunshine or showers and sometimes the rain or the fine weather as the case may be comes as a *post hoc*, if not as a *propter hoc*.

Then there is the cure of King Hezekiah, who was "sick unto death" from the effects of a boil, but whose life was saved by his own tears and prayers and through Isaiah, who prescribed "a lump of figs" to be applied to the boil. No one in these days, however, would think it wonderful that a fig poultice should bring away the core of a ripe boil in three days.

There is little to venerate or respect in the miracles of the saints of the second, third and fourth centuries. The miracle associated with the career of St. Ambrose in the fourth century looks like imposture and gullibility. At a time when his influence was on the wane and required vigorous support St. Ambrose had a dream, which led to finding beneath the pavement of the church the remains of two martyrs. The common people crowded to see these venerable relics, and many who were sick were healed by touching the bones. St. Ambrose was in ecstasies over these miraculous cures, and preached eloquent sermons thereon. This was but a poor and vulgar imitation, however, of the miracle of the man who, when about to be buried, was thrown into the sepulchre of Elisha, and came to life immediately his body touched the bones of the prophet.

The tactics of St. Ambrose remind us of the miraculous cures which were worked on the fanatics at the tomb of the Jansenist deacon, Francois de Paris (Abbé de Paris), in 1730 ; they also recall the procession of the multitudes one has seen at Lourdes : and the filthy fragments of dressing and the discarded sticks and crutches ostentatiously thrown into the hedgerows near the shrine of miraculous cures, in the South of Ireland. The cemetery of St. Médard in Paris where Francois was buried became so overrun with pilgrims that the place

of the grave was walled up ; hence arose the satirical epigram : “De par le Roi desence à Dieu de fair miracle en ce lieu.”

All the Ecclesiastical miracles are highly improbable. They resemble those fictitious legends, those mists of error, which have been invented by the imagination of impostors for acceptance by the credulous, to some of which I will in a moment refer.

In B.C. 280 there arose in Alexandria a medical sect known as the “Empirical School.” Its members relied solely on tradition, analogy, and individual experience, and rejected all philosophical theories, and all *a priori* reasoning. The term “empiric” in the present day is sometimes given to quacks—i.e., those who practise medicine or surgery, but who have not received a regular medical training. More commonly it is the name applied to qualified men, who rely on tradition and personal experience. By such, anatomy and physiology are considered to have but little connexion with practice, the whole object of the art and science of medicine in their view being to obtain practical results by therapeutical agents, to search out specifics for every malady, and to cure disease without troubling to discover its true pathology and pathogenesis. It was empiricism of this kind which laid our profession so much open to the charge of charlatanry, and was one of the reasons why it excited the scorn and satire of such men as Petrarch, Montaigne, and Molière.

Empiricism has had its professors in all countries and in all ages since the days of the Alexandrian School. Suetonius relates that the life of Augustus Cæsar was saved by the physician Antonius Musa, who insisted that hot medicines, in his experience, were the only remedies for the disease from which Cæsar was suffering ; all the rest of his doctors had thought the same about cold medicines. Herodotus tells that the Lybians professed that persons were prevented from having catarrh for the rest of their lives if the veins of the head and temples had been burned and cauterised when they were four years old. Galen reported a case to prove that leprosy was cured by wine drunk out of a vessel into which a viper had crawled.

Montaigne, the earliest systematic sceptical writer in the French language, published at the end of the sixteenth century an amusing but satirical essay on physic and physicians. He mentions many of the empirical remedies then in use, such as “the left foot of a tortoise, the urine of a lizard, the dung of an elephant, the liver of a mole, and blood drawn from under the right wing of a white pigeon.” Montaigne comments at some length on his own sufferings from stone in the bladder. He avoided being treated by physician, and no wonder, for he adds, “and for us who have the stone, so scornfully do they use us in our miseries” that they prescribe “the excrements of rats beaten into a powder.” He learnt the fallacy of the idea that the blood of a he-goat was a remedy for stone by having one killed and finding stones within its body. From Montaigne’s own account, however, it is clear they were not urinary calculi but

bezoars, which are not uncommon in the stomachs of goats, antelopes, and other animals, and which formerly were esteemed as antidotes to all poisons.

Montaigne illustrates what he decries as "the variety and weakness of the rationale of the profession," by citing the reasons given by one set of physicians why aperitive medicines are proper for persons subject to the stone, and the reasons given by another set why aperitive medicines are dangerous to those same persons, by tending "to create gravel, and to occasion a certain and most painful death." Here in this hospital public opinion has required us to try numerous purely empirical drugs for cancer, such as chian turpentine, condurango root, violet leaves, molasses, and others—all as entirely without curative effect as the repulsive things mentioned by Montaigne.

Under Arabian and other Oriental influences medicine became mixed up with magic, alchemy, and astrology; and in the Middle Ages it came under the yoke of theological dogma, and was enslaved by superstition. The influence of superstition continued long, and, though scotched, is not even yet killed. The practice of touching as a cure for scorbutic diseases was exercised by all our Sovereigns from Edward the Confessor to the time of Queen Anne, and was especially prevalent in the reign of Charles II. Though it is unfair to the memory of the illustrious physician of Norwich, Sir Thomas Browne, to quote him in illustration of the superstitions which prevailed in his day, without mentioning that in a subsequent work published 12 years later he deliberately attacked them as "Vulgar and Common Errors," it is nevertheless true that in "Religio Medici," published in 1634, he declared his belief in the philosopher's stone, in witches, in palmistry, and in spirits and tutelary angels; and he rated those who denied the existence of witches as atheists and "worse than infidels."

A custom called "La Couvade" formerly prevailed in the south-west part of France, and very widely, too, in other parts of the world, which obliged the husband of a lying-in woman to go to bed and take charge of the baby. It was he who received the congratulations of his friends, in bed; whilst the mother got up and went about her business in the house, as if nothing had happened. Remains of this custom are said to exist among different races even at the present day—namely, in Corsica, Guiana, Borneo, and elsewhere. The explanation used to be that the father had to expiate original sin; but of late it has been held that he was put to bed to be out of the way for fear that, if he were going about as usual, by some unintentional act he might injure the baby, not physically, but through the spirit.

It was at one time taken for granted in Christian countries, and the view is said to have been sanctioned by Luther, that hail and wind were the works of wizards. Combe, in his "Constitution of Man,"<sup>6</sup> relates that in the middle of the eighteenth century the country west of Edinburgh

was so unhealthy that every spring the farmers and their servants were seized with fever and ague, and that these visitations were believed to be Providence. After a while the land was drained and the fever and ague disappeared.

Swinburne, in his "Travels through Spain (1775-1776)," tells that the clergy in the latter part of the eighteenth century were on the point of putting an end to the opera because they attributed the want of rain to the influence of that ungodly entertainment.

In 1760 the physicians of Madrid opposed the cleansing of the streets of the city, as they considered the smells emitted from them were wholesome. The argument was that "the air being sharp and piercing it was extremely probable that bad smells made the atmosphere heavy, and in that way deprived it of some of its injurious properties." But Spain was a particularly backward country, for Townsend during his journey through Spain in 1792 found that the leading physician of the country doubted the truth of the circulation of the blood, which Harvey had proved 150 years before. Even in the beginning of the nineteenth century there was not a lecture room for practical instruction in the colleges of either Madrid, Barcelona, or Cadiz.

As long as it was forbidden to question the teaching of the Church, physical science made but slow progress, scientific investigation was under great restraint, and scientific investigators were frequently punished as heretics. As long as periodic attacks of fever and ague were believed to be visitations sent by God it was heresy to make efforts to prevent them. As long as a lengthy period of drought was regarded as a Divine punishment for indulgence in ungodly amusements it was conceivable that the closure of the theatres and opera houses might bring down the gentle rain from heaven as well as the drop-curtain of the stage. But as soon as fever and ague disappeared with effectual drainage, it was possible to realise that the cause of these diseases was the stagnant state of the land, and not the vengeance of an offended Deity. And when the rainfall, which at one time makes the corn grow, and at another ruins the crops before they can be garnered up by the farmer, is ascertained to be a necessary consequence of other antecedent occurrences, and its variations are brought under known laws of Nature, then probably the prayer for rain will be expunged from our Prayer Books and Church Services.

In 1853 a severe epidemic of cholera spread over this country and was very destructive in Scotland. The clergy, supported by the people of Scotland, applied to the Home Secretary to know if the Queen would appoint a day for a national fast, which was the most effectual way in their judgment of propitiating the Deity to stay such a terrible pestilence. This view was in accord with the superstitious fancies as to the origin of disease then prevalent in Scotland, and which were once almost universally cherished alike by Pagans, Catholics, Protestants, and Presbyterians.

throughout the world. Lord Palmerston, the Home Secretary at the time, had the courage to set at defiance such narrow notions. On behalf of the English Government he informed the Presbytery of Edinburgh "that the affairs of this world are regulated by natural laws, on the observance or neglect of which the weal or woe of mankind depends," and he advised that it was better to cleanse than to fast, and that under the circumstances activity was preferable to humility. He urged that efforts should be made to destroy the causes of disease by improving the dwellings and other conditions of the poor. If this were done he doubted not that all would go well, otherwise pestilence would be sure to revisit them, "in spite of all the prayers and fastings of a united but inactive nation." The action of Lord Palmerston showed the triumph of common sense over prejudice; of practical wisdom over ignorant helplessness; of science over the old theological, as distinct from religious spirit, which formerly made martyrs of scientific men by persecution and, sometimes by death.

In the half-century which has elapsed since the correspondence just referred to between a member of the British Government and the heads of the Scottish Presbyterian Church, science has made a progress unparalleled in any previous period. At that date the continued fevers, and diphtheria, erysipelas, pyæmia, septicæmia, and other septic diseases were ever present mysteries. Their immediate causes were unknown, their treatment tentative and uncertain, their prophylaxis of the most general and miscellaneous character. To-day all is changed. The cause of cholera is sought for amongst the microbes, and the majority of infective diseases have been proved to be due to the invasion by specific organisms, which come from without and multiply within the body. Prevention and treatment, immunity and cure, have been, thanks to experiment, placed upon a definite and sure foundation. The very microbes which cause the disease are utilised, directly or indirectly, as the means of protection against and palliation of it.

But although the irrational opinions formerly entertained in regard to the origin of disease in particular, and to the phenomena of nature in general, are well-nigh extinct, and although the views of science and of religion (as distinct from the theological view) are well in accord as to the uniformity and order of the material world, differences still arise in reference to the complex nature of man and the relation of the mental and the material parts of him. It is too much to expect that all opposition to science and research have ceased and that superstition is got rid of altogether.

Though the struggle between theology and science is probably over and plague and pestilence, as well as earth-quakes and famine, are now universally admitted to be the natural effects of other antecedent material events, research by experiment is at the present time being hotly resisted by a band of no doubt well-meaning persons whose intentions are good but whose methods are tortuous. This band having, by way of exciting



prejudice, stigmatised experiments on living animals with the name of vivisection—as though all instead of a mere fraction of a unit per cent. of them were cutting experiments—has, under the assumed banner of humanity, moved a great charitable fund for the benefit of the sick poor to exclude from its bounty any direct or indirect assistance to medical education or research, and has been the cause of the appointment of a Royal Commission on Vivisection, whose report we are at this moment eagerly awaiting, though without fear or misgiving as to the result.

Within the last few days we have read (to quote the words of Lord Curzon's letter to the *Times* on Nov. 4th) of an "alleged interview between a notoriously hysterical journalist and the spirit of the illustrious departed, to which publicity has been given," as a political manoeuvre in favour of an unpopular Budget. We have had at the same time the opportunity of following a trial of, and a verdict with damages of £1000 against a hypnotist, in support of whom persons were found to bear witness to his marvellous cures and to his indifference to the dangers of the "Cage of Death." The judgment of Mr. Justice Darling on this case deserves careful perusal. There is also to be seen in the latest issue of a journal whose statements carry much weight with many of its numerous readers the following extraordinary editorial admission: "We have no difficulty in believing that ulcers that have a malignant aspect may be healed by the hope that comes from a potent suggestion. We have ourselves known of more than one case in which every clinical sign of malignant disease of the stomach was present, and in which a cure was effected by means that could only have derived their potency from suggestion."

One of the results of "looking back," is that we realise how phases of opinion and cycles of thought, as well as epidemics of disease, are prone to recur. It is possible for the oldest amongst us to recall periods at which mesmerism, hypnotism, thought-reading, table-turning, and faith-healing were temporarily in vogue, and then passed away again out of favour or notice. Just now there is a phase of opinion—entertained, too, by some honourable and distinguished men—that there is scope and reason for the exercise of "Suggestion" as a remedial and curative agent; and it has been seriously put forward that the already vastly overburdened medical curriculum should be still further charged by the addition of "a sound psychological training," so that every medical practitioner shall be able to employ "mental therapeutics" and to engage in "the scientific practice of suggestion."

Surely it behoves the leaders of medical thought and opinion to walk most warily in this direction. A committee to make a careful scientific investigation of the nature and subsequent history of the cases asserted to have been cured by Christian Science, by hypnotism, and at Lourdes, might make a valuable contribution as to the questions involved; but I venture to think it would be highly undesirable to combine "the practice of suggestion" with the ordinary practice of our profession. Such a course

seems to offer encouragement to those outside the profession to make arrogant pretensions to curative powers, and might possibly lead to unfounded accusation and regrettable indiscretions even within the profession itself, especially if the character of the cases which are regarded as proper subjects for this treatment be remembered. Even if it should come to be decided that a set of persons should be properly trained to practice treatment by suggestion, I am not quite sure that the doctor should have more to do with the treatment than merely to examine and pronounce whether the case is suitable for its employment.

I will conclude by repeating what I have previously said in the course of this address, namely, that all actions involve belief, and all successful action true belief, and that to arrive at true belief in medicine we must go through scientific scepticism to knowledge, through doubt to certainty, and replace empiricism by experiment and superstition by research.—*The Lancet*, December 4, 1909.

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## Acknowledgments.

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THE  
CALCUTTA JOURNAL  
OF  
MEDICINE

Vol. xxix.]

April 1910.

[No. 4.

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INFECTIOUS DISEASES.\*

BY DR. SATISH CHANDRA BANIRJEE, L.M.S.

Before I begin kindly permit me to express my deep sense of responsibility and of my own inaptitude in undertaking to read a paper to an expert audience like the one assembled here, and indeed I would have been the last man to come forward, had I not been convinced that this omission to respond to the call of our learned Health Officer, would be nothing short of ingratitude.

Our to-day's subject as you all know is infectious diseases. The subject is a broad and comprehensive one, but as it is impossible in a paper of this length to touch, even summarily, all the communicable diseases, I would try and confine myself to diseases which frequently run in epidemic form in our country. Epidemic diseases may be defined as diseases prevailing occasionally and with unusual severity and at uncertain intervals, attacking large masses of people and lasting in most cases for months and obeying a certain law of periodicity.

The characteristics of this group are :—

- (1) They occur in epidemics.
- (2) They are obviously contagious and infectious.

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\* A paper read at the Calcutta Corporation Health Office on the 26th May, 1908.

(3) That each member is absolutely distinct from its fellows and runs a typical course.

(4) That the poison which gives rise to each of them multiplies in a marvellous manner, thus the introduction of a single case into a community of any of these diseases may be followed by the death of thousands from the same disease.

Now the chief human diseases which have these characteristics and are supposed to spread by means of special agencies are Exanthemata, Typhus, Typhoid, Cerebro Spinal meningites, Dengue, Cholera, Plague, Influenza, Whooping cough, some forms of Dysentery, Diarrhœa, etc., etc., and it has long been a belief that the spread of these infectious diseases may be prevented by destroying the agencies in some way, and fumigation and fire have been employed from centuries in times of epidemic. But now-a-days we cannot depend entirely on these simple methods, generated by inspiration. We must supplement them by rational methods, methods based on scientific knowledge and experience.

To do this we must know :—

- (1) The nature of these contagious agencies.
- (2) The mediums through which they spread and their mode of invasion.
- (3) The effects produced on them by the methods supposed to destroy or modify them.

• **Nature of these contagious agencies :—**

For a long time nothing could be discovered to account for the appearance of these diseases, though they were known to be produced by something which multiplied in patient, hung about his clothes and carried through the air for a considerable distance. At first it was thought to be a gas, but it cannot be a gas as diffusion would soon put an end to its power of mischief. For obvious reasons it cannot be a fluid, so this something must be a solid in a state of fine subdivision, and as a solid it is insoluble for it can be removed from fluids by processes of filtration and subsidence. These facts together with its wonderful power of multiplication seemed to show that these somethings must be

some living organism and Henle formulated that living organisms probably of vegetable nature were the causes of infectious diseases and his views have not yet been refuted. In a few cases and specially in malarial fever minute animal organisms have been traced.

These vegetable organisms are for the most part microscopic. They may be included under one head of Microbes or Germs. The Microbes vary considerably in form. The round or oval shaped are termed Microcci, the rod shaped Bacteria or Bacilli and the spiral shaped the Sparillum. Their size varies from 1-50000th to 1-500th part of an inch. These belong to the class Thallophytes and as they are destitute of chlorophyll, they belong to the class fungi. The bacteria of whatever form it may be, consists of a peculiar form of protoplasm and is only a cell, but contains no nucleus. A cell membrane which is composed of a substance allied to Cellulose is also seen. Some microbes are very mobile and contain flagella, while others are just the reverse. The bacteria multiply by transverse fission and under favourable circumstances an individual will multiply a millionfold in 24 hours; while others reproduce by spore formation and are called endosporous and arthosporous according as the spores are formed inside or outside the cell. Sometimes fission and spore formation may go on together.

These spores are extremely resistant to unfavourable circumstances and remain latent for a long time.

Moisture is necessary for all bacteria and most bacteria grow well between 18° and 38° C and in the absence of light and in a slightly alkaline medium they can not grow without Nitrogen in some form.

**Medium through which they spread and the nature of their action.**

We know that each disease is attended with implication of some special part of the body and it is essentially those parts which contain contagia. In these parts there is rapid growth and detachment; thus the pus and epidermis in small pox, mouth and throat epithelium in diphtheria, discharged detritus



of peyrs glands in enteric fever, discharges of cholera, dysentric stools, skin in typhus, are the breeding places of the contagious particles. The portion of body thus thrown away may pass into air, etc., and spread infection.

### **How they spread and get access into body.**

(1) They may be conveyed by the air and taken by the mouth. This is the common method, and occurs in such diseases as whooping cough, scarlet fever, measles, small pox, diphtheria.

(2) They may be carried by means of water into stomach or intestines as in cholera, enteric, dysentery.

(3) They may be communicated by actual contact and spread by means of infected articles, clothes, etc., as small pox, plague, etc., or by broken surfaces of the body.

(4) Flies and insects help to the spread of some of these diseases.

### **How they act.**

In their growth bacteria are engaged for the most part in splitting off organic compounds, and in the building up of others. In this process they eliminate chemical products, some of which have pathogenic importance, i.e., unformed ferments, alkaloids and toxins. Bacteria produce their effects by the products which they evolve, and the effects vary considerably according to the kind of bacteria and their nature of action. In true infection, bacteria enter the body, multiply and secrete the poisonous chemical substances (toxins) which cause the particular diseased state. The incubative period is the time that elapses between their entrance, and setting in of symptoms due to the toxication of their products. The diseases are caused and spread by a process resembling the sowing of seed on a suitable soil in which by the reproduction of the seed, it, in turn, becomes a new centre or focus whence it may spread to others. A good example of this sequence of events is seen if we show a little yeast into a solution of sugar. Yeast consists of minute vegetable cells, these on being placed on sugar set up fermentation by which the sugar is split up into  $\text{CO}_2$  and alcohol, and at the same time the number of yeast cells increase enormously.

Now, if human body be the medium and instead of yeast cells some microbes of an infectious disease be introduced we can readily see the analogy between the process of fermentation and infectious disease production and as fresh yeast cells are produced in the sugar solution, so new disease germs are formed inside the body ever ready to reproduce on gaining access to another person all the features and peculiar characteristics of their own disease. These bacteria are present all over in nature. We may breathe them in air, we eat them with our foods and drink with water and milk, and in fact the mystery is how we ever escape their attacks.

Several theories have been suggested to explain this, but the most laudable and intelligible one is that there are in our bodies a number of cells resembling the white blood corpuscles, whose function is to attack, destroy and remove all harmful foreign substances which enter the tissues. The liability to infection depends upon the resistive action and strength of those cells, and one's immunity may be due to the fact that his tissues are rich in these special protective cells, or it may arise from the circumstance that he had had already that particular disease, or had been inoculated with a protective chemical substance which is hostile to the germs of that particular affection.

Now on what this protection depends is uncertain, but a possible explanation is that in course of each of these diseases or following some protective inoculation, the blood or tissue undergoes such a change that they no longer afford the condition necessary for the development of that particular causative microbe. Now this may be due to the removal of some chemical substances necessary for the germ growth, or to the production of some products in the blood which prevent further multiplication of the invading germs, or some such modification of the cells or tissues, that they may resist successfully future invasion by these microbes. Now having explained the general nature, causation and the spread of the infectious diseases we may now pass on to a brief consideration of the epidemiology of some of the most common forms.

## CHOLERA.

Cholera may be defined as a deadly parasitic endemic and epidemic disease characterised by profuse vomiting and purging with symptoms of collapse allied to asphyxia. Some hold that the home of cholera is Lower Bengal about the delta of the Ganges; others regard it as epidemic in every province of India. In China about the delta of Yangtsekang, it appears every year with perfect regularity and it often arises at the delta of the Nile at a corresponding period.

The parasite is the comma bacilli, the germs exist largely and solely in the bowels of those ill with the affection, and is thrown off in the discharges or excreta of those suffering; and when cast off possesses untold power and capabilities for spreading and giving cholera to others. Their extension is dependent upon two conditions.

(1) Human intercourse.

(2) Pollution of food and water by the excretal discharges of the cholera stricken.

Besides human intercourse certain conditions as to time, place and individual susceptibility aid in causing the spread of cholera. Human intercourse furnishes motor power to the vehicle by which the poison is carried from one place to another. The conditions of time and place favourable to cholera diffusion are warmth, moisture, a general want of sanitation, i.e., fouling of air, water and food by collections of dirt and faulty sewage removal. Cholera germs can not spread through the air to a considerable distance as they die in the absence of moisture or when dried up.

Soil and Cholera. Peter Koifr's views. For the origin of a cholera epidemic three factors are essential.

(1) The specific choleraic microbe.

(2) The susceptibility of the person.

(3) The local and seasonal condition of the soil.

Should one of these factors be wanting no epidemic can develop.

The microbe as already mentioned is present in the bowel discharge of the sick, but in a nonvirulent condition. To make it virulent certain local conditions are necessary and in the absence of these conditions extensive spread of disease cannot take place. These conditions are present in a permeable soil polluted with faecal matter and with a definite amount of heat and moisture. Cholera germs do not live more than a few days in soil which is quite dry, acid or soil which is saturated with water. Petenkofer connected outbreaks of cholera with alterations in the level of water. His views are that cases increased as ground water fell and decreased as it rose, the fall of the subsoil water leaving the soil moist, aerated and in just condition to further the activity of the specific microbe.

#### SMALL POX.

Small pox is injurious from the commencement of the disease, the infection gaining in intensity as the eruption advances and even up to including the scabbing stage. The microbes are contained in the secretions of nose, mouth and air passages as well as in the contents of the pustules or pocks which form on the skin. When the pocks dry, these diffuse themselves to great distances in the form of dust. Owing to the great resisting power of these microbes, the spread of small pox by means of infected clothing is great. Period of incubation varies between 12 to 15 days and the person is free from infection directly all the scabs have fallen off from the skin. Individual protection against an attack of small pox can be obtained by three ways.

Natural small pox, inoculated small pox and vaccination. Vaccination is the inoculation of man with the small pox of the cow, by which the man contracts vaccinia or cow pox which is really S.P. in a mild form.

I am sorry I have no time to enter into details.

#### CHICKEN POX.

Chicken pox is usually a mild disease, but undoubtedly infectious. The germ is probably inhaled from the air and is

derived from scabs and crust, which fall off from the water blisters. The incubation period is about a fortnight and the disease remains infectious for about a month.

#### MEASLES, MUMPS AND WHOOPING COUGH.

They are all infectious even from the early stages. The infective germs are contained exclusively in the mucus of nose, throat or in the mouth. The contagion is capable of spreading not only by the air, but by clothing and bed linens. Owing to their early infectiousness, these diseases spread largely by the attendance of children to school. There is no evidence that these diseases are disseminated by the agency of water, milk or even by domestic animals. Cases of measles or whooping cough should not be considered to be free from infection for at least a month after the date of onset and not then even if any cough remains.

#### DIPHTHERIA.

This eminently infectious and very fatal disease is transmitted by kissing, inhaling the breath of those affected, by milk, and possibly by some other kinds of food or drink and by clothing.

Those living in damp and badly drained localities are particularly liable to these attacks, and there is some reason to suppose that sewer gas may give rise to sore throats which closely resemble diphtheria. The incubation period ranges between 2 days to a week, and the earliest symptoms are sore throat, weakness, swelling of glands of the neck; a yellowish white skin forms on the throat which extending into larynx may cause dysphagia and suffocation; great prostration and heart failure mark the progress of the disease. The usual time of infectivity is about a month. Most cases of so-called croup are really cases of unrecognised diphtheria; so also are many apparently mild cases of ordinary sore throat. So it is advisable as a precautionary measure to treat even the mild cases of sore throat amongst children as a severe affection and not to permit them to attend school or mix with children. The quarantine period is 12 days.

**TYPHOID.**

This disease is most prevalent in youth and adolescence, the cases becoming fewer and fewer after the age of 30. The microbe is almost entirely found in the discharge from bowels, having originally gained access to the body, through the mouth, by water, milk, food, by sewer gas and perhaps directly by fingers of nurses attending the sick. The incubation period is 14 days and the infective period lasts all the time the diarrhoea exists, probably 3 to 4 weeks. The risk of infection from sick to others is greater in small crowded houses where cleanliness, disinfection of clothing, excretal discharges and soiled clothes cannot be ensured.

**PLAGUE.**

Experience has shown that plague exhibits a seasonal periodicity, which though not same in all places tends to recur about the same time each year in a particular place. In most parts of India plague assumes an epidemic proportion during the period beginning from February to June. In the free season if a case is imported very seldom rat mortality is noticed and there is no spreading, while if a case is imported during epidemic time, the case is at once followed by rat mortality and to the occurrence of indigenous cases.

**HOW THE DISEASE IS SPREAD.**

Pneumonic plague is one of the principal factors in the spread of the disease. Pneumonic cases appear to be strictly confined during the first two months of the epidemic. Dr. Gill records from the Punjab that the introduction of one case was followed up and traced to five villages, where in spite of efforts made to stamp it out it caused 27 deaths. But this was not all, it was also responsible for subsequent outbreaks of bubonic plague in some of the adjacent villages, with the result that 54 persons died from this form of the disease. He concludes by saying that the infection in pneumonic plague is from man to man, and that it can also pass with ease from man to rat and when this takes place, an outbreak of rat plague and its sequence on usual lives follows.

**HOW AN INFECTED MAN HELPS THE SPREAD OF THE DISEASE.**

When an infected person appears in a free area, rats begin to die in the vicinity of the house of the man from the 8th to the 12th day of his arrival. From this focus of infection, the area in which dead rats are found gradually increases, then in the vicinity of the houses in which dead rats were found a plague case occurs. From this time the epidemic is said to begin, at first solely with one or two cases a day, then the figures rapidly rise and 50 to 100 cases occur daily. It is usually found in bubonic plague epidemics, that the rat mortality precedes the occurrence of plague in man and thus giving a warning of approaching danger.

Then it may be spread by the introduction of infected clothing. At the end of March 1901, a man visited Lepis, a plague free village in the Punjab. He came from an infected village 40 miles away. He stayed here in the house of his relatives for 2 days and then left for Rawalpindi in usual health. Two weeks after his departure dead rats were found in the house he occupied and on April 19th, a plague case occurred in the house. Subsequently, a small epidemic radiating from the house passed through the village. No other person was stated to have recently visited the place which occupied an isolated position. This illustration suggests that disease was conveyed into the village on the clothing of the person or in his baggage. Several other similar instances are on record.

**•SPREAD BY MIGRATION OF RATS.**

The spread of plague from village to village by the migration of rats has not been satisfactorily proved; what happens is this. When rats begin to die, man flies and thus brings infection to an uninfected place, but it must be mentioned here that the accidental importation of an infected rat with merchandise on a ship, etc., is a fruitful source.

Now, a few words as to the manner in which man becomes infected. In pneumatic plague it is direct from sick to healthy. In the case of bubonic plague, a link between the rat and man is necessary and this is supplied in the majority of cases by rat

fleas, and as Dr. Hossack has already instructed us about the details of plague and the part the rat fleas play in the spread and causation of disease, I think no further mention is necessary here.

Now we shall pass into the question of preventive measures.

These can be divided into two heads :—

- (1) Preparatory and precampaignic
- (2) Campaignic

By preparatory methods I mean those which are to be devised and taken during the period of restness for general sanitary improvements.

By campaignic methods I mean methods which are to be vigorously carried on, on the outbreak of a disease and in times of epidemic.

We all know what enormous sums are being spent year after year and with what care and forethought men are being trained, elaborate preparations and detailed organisations are being made almost every day, so that in time of war our army and navy may not lack in men and means and can easily achieve what it is expected to do.

Now, the sufferings and miseries caused by a defeat in war dwindle into nothingness, when compared with the whirlwind of misery and desolation caused by these diseases and it is a pity that sufficient attention has not yet been focussed on this point. I only mention this because I have no faith in the efficiency of methods and action organised in haste in times of epidemic and general panic. To combat successfully we must work patiently and systematically for years,

First, by creating a thoroughly organised preventive service and increasing the prospects and emoluments of men engaged in the work and granting security of tenure with good and honest work and encouraging scientific researches.

Secondly, by devising means to spread diffusion of knowledge to raise the material, social and moral status of the people, by encouraging them to cultivate the resources of the country and to develop indigenous industries, so that in times of action we



may count intelligent brotherly co-operation instead of passive resistance as at present found.

Thirdly, by improving the general sanitation of the locality, by a sympathetic but rigid enforcement of all the clauses of public health laws, by providing good roads, good drains, good water supply and opening up over-crowded localities, pulling down insanitary quarters and providing model dwelling work houses for the poor, improving food supply and regulating and improving markets, factories, offensive trades and conservancy arrangement and by encouraging vaccination and inoculation, etc.

*(To be continued).*

## REVIEW.

*Radium as an Internal Remedy.* Especially Exemplified in Cases of Skin-disease and Cancer. By John H. Clarke, M.D., 136 pages cloth 2s. 6d., net. The Homœopathic Publishing Co., 12, Warwick Lane, London E. C.

That Radium is preeminently a Homœopathic property can be gathered from the following lines from the preface of the book: "Radium the wonder-child of twentieth century science, is in a peculiar way a property of Homœopathy. It was discovered by the son and daughter-in-law of a well-known homœopathic practitioner of Paris, who was himself the son of a still more famous homœopath and Missionary of Medical Science, who made England the land of his adoption and his life's labours." That Radium should have been discovered by one whose father and grand-father were homœopaths is a peculiar irony of fate, because it has startled the scientific world by its peculiar behaviour and the action of its infinitesimally infinitesimal particles. Gross-minded man can not understand how fine and delicate is our nervous system and how this nervous system can be made to work by the so-called infinitesimal dose of medicine. Things which we can not see we are slow to believe.

Dr. Clarke has given the history of the new element and also its uses in diseases. The book is divided into five chapters. The first chapter is an introductory one and in it the author discusses the remedy from its birth to its effects upon human body both homœopathically and allopathically. M. Curie may be said to be actually its first prover, for he said that "if there is one thing I know of Radium, it is that *it will burn.*" When M. and Madame Curie were interviewed by M. F. Lees, M. Curie made the following remarks: "The doctors think that they can cure lupus and polypus—perhaps cancer, with it, but I know nothing about it, it is their business, not mine. But *it will burn.* I can testify to that. I put a tiny bit of a salt of Radium in an India rubber capsule, fastened it on my arm and left it there ten hours. When I took it off

the skin was red, and the place soon turned into a wound, which took four months to heal." This then is the first proving of the Radium.

In the *second* chapter Dr. Clarke gives a proving of Radium Bromatum and the symptoms of six provers have been carefully recorded ; the seventh may be called a side effect of the use of it. These provings should encourage other intelligent and inquisitive practitioners to continue the onerous task of proving of such a valuable remedy. The *third* chapter gives the clinical uses of Radium Bromatum and the fourteen cases that have been recorded are simpler cases of skin affections and in the *fourth* chapter on carcinosis and cancer the use of the Radium Bromatum has been shown on the fell disease. The *fifth* and the last chapter on the Schematic arrangement of symptoms is a very important one and the symptoms have been carefully arranged. We hope this chapter will gradually increase with the provings and the use of the drugs.

This book should be read by every homœopathic physician and he will find that the trouble and money that he will spend on it will not be in vain. Besides the physicians other lay people will amply profit by its perusal.

*The cure of Tumours by medicine* with especial reference to the cancer nosodes. By John H. Clarke, M.D. James Epps & Co., Limited, London, 1908.

This is an attempt to show how Tumours can be cured by medicine. There are several diseases which are now known as incurable by medicine and nothing but surgical interference can do any good. But, in these days of serum therapy, which is but the rude imitation of the principles of homœopathy, we may aspire to do some good to such so-called incurable diseases. We have not yet got any marked results from our old school friends about the cure of Tumours by their antitoxin virus, but this little book of Dr. Clarke will show how several kinds of Tumours can be removed safely by their nosodes. A perusal of this book will not be unprofitable and minds not biassed with previous misconceptions will find materials for future

development of a branch of therapeutics of incurable diseases, such as tumours, &c.

*Whooping-Cough cured with Coqueluchin* its Homœopathic Nosode.

By John H. Clarke, M.D., 90 pages. Cloth 2s. net. Postage 2d. extra. The Homœopathic Publishing Co., 12, Warwick Lane, London, E. C.

Here we have got a brochure from the facile pen of Dr. Clarke. This is a second, enlarged and revised edition, the first having appeared about twenty years ago under a slightly different title. This edition had been doing good and useful service when it was summarily suppressed and the reason for this action was that a firm of German pharmacists had given to a proprietary article of their own the name by which the homœopathic nosode of whooping cough had hitherto been known and had succeeded in getting that registered in England. According to the suggestion of Dr. Marc Jousset of Paris the remedy has been named *Coqueluchin* after the French name for whooping-cough, *Coqueluche*.

The author in his preface says that since the first edition appeared "a number of things have happened, and among them not the least important is the pronouncement of Von Behring in favour of the claims of Homœopathy." We quote below the words of von Behring the Nestor of old school physicians:—"The Scientific principles of this new tuberculotherapy are yet to be established, just as the Scientific principles of my antitoxic serum therapy remain to be explained, notwithstanding the assertion by many authors that the therapeutic action of my diphtheria and tetanus antitoxins is clearly understood since the promulgation of Ehrlich's side-chain theory. For speculative minds the new curative substance will undoubtedly become a most interesting object of Scientific investigation, but I do not believe that medicine will profit much by it. In spite of all scientific speculations and experiments regarding small-pox vaccination Jenner's discovery remained an erratic block in medicine, till the biochemically thinking Pasteur, devoid of all medical class-room knowledge, traced the

origin of this therapeutic block to a principle which cannot better be characterised than by Hahnemann's word, "*Homœopathic*." Indeed, what else causes the epidemiological immunity in sheep, vaccinated against anthrax, than the influence previously exerted by a virus, *similar* in character to that of the fatal anthrax virus? And by what technical term could we more appropriately speak of this influence, exerted by a *similar* virus, than by Hahnemann's word, '*Homœopathy*?'

"I am touching here upon a subject anathematised till very recently by medical pedantry; but if I am to present these problems in historical illumination, dogmatic imprecations must not deter me. They must no more deter me now than they did thirteen years ago, when I demonstrated before the Berlin Physiological Society the immunising action of my tetanus antitoxin in infinitesimal dilution. On this occasion I also spoke of the production of the serum by treating animals with a poison which acted the better the more it was diluted, and a clinician, who is still living, remonstrated with me, saying, that such a remark ought not to be made publicly, since it was grist for the mill of Homœopathy. I remember vividly how Dubois-Reymond, who, during the progress of the demonstrations and discussions, had become drowsy, suddenly sat up all attention when I replied in about these words:—

" 'Gentlemen, if I had set myself the task of rendering an incurable disease curable by artificial means and should find that only the road of Homœopathy led to my goal, I assure you dogmatic considerations would never deter me from taking that road.' " These utterings of Von Behring prove conclusively that the truth will prevail however dogmatically it is anathematised. These bold words remind the fearless utterings of Gallileo in his prison " thus I see the earth move round the sun."

"The infinitesimal dose" says Dr. Clarke very rightly "is a greater stumbling block to the allopathic mind than is the law of similars," but why should it be we cannot understand when they accept the efficacy of much diluted serum.

The book is divided into four chapters and in the introductory chapter the author gives a general survey of the relation between homœopathy and the nosode and in the second he defines what a nosode is; in the third he gives fourteen cases of cure by Coqueluchin and in the last chapter the author shows what lessons can be had from the previous chapter in which some cases have been recorded. The author then describes the several ways in which remedies may be introduced in the homœopathic Materia Medica. He then says that the first nosode used in homœopathy was proved by Hahnemann himself and this was *Psorinum*. Other nosodes have not been thus proved and Coqueluchin has got the same fate. Proving is made with homœopathic attenuations of the virus which do not produce the disease itself but elicit certain symptoms which become valuable guides to their use in any morbid condition. Then the author gives certain symptoms which were removed by the use of the remedy and asks the practitioners, like a true physician, to test in all cases so that they may then be regarded as leading indications for the use of the remedy. These symptoms are :—

- (1) Itching of the palate on lying down at night.
- (2) Stinging pain in or on the chest with cough.
- (3) Sickness or feeling of sickness at the end of cough.
- (4) Sobbing or sighing at end of cough.
- (5) Strangling sensation with cough on waking.

Then he gives eight additional indications for the use of the medicine and lastly he gives the relationships of remedies.

The author then finishes his brochure with the following lines:—"With all the earnestness which I can command, I entreat my homœopathic *confrères* to give to the use of the nosodes the very deepest and most careful attention." Every physician should have this little book by his side and the wise and scientific method of treating a case as shown by the author should be followed by every physician if he wants success in his treatment.

*'The Lesser Writings of C. M. F. von Bœnninghausen.* Compiled by Thomas Lindsley Bradford, M.D. Translated from the original German, by Professor L. F. Tafel. 350 pages 8vo. Cloth, \$1.50. Postage 15 cents. Philadelphia, Bœricke and Tafel, 1908.

The lesser writings of von Bœnninghausen have been compiled in a neat book form by Dr. Bradford. The name has been chosen after the Lesser Writings of the father of Homœopathy. The articles included in this volume are all very interesting and possess mines of information. We have nothing much to say about this book. The translation is easy and flowing so that one can hardly believe that he is reading a translation from the German and not the original; the book would have been complete if the contents had been given like all other books in the beginning.

*A Guide to the Twelve Tissue Remedies of Biochemistry.* The Cell-Salts, Biochemic Schuessler Remedies. By E. P. Anshutz, 91 pages. Cloth, 75 cents. Postage 5 cents. Philadelphia, Bœricke and Tafel, 1909.

"This book" as the author says, is "but an orderly and more convenient arrangement of the material left by Schuessler and of accumulated experience of others, laying no claim to much original material." It is a very useful little book and will be of much help in practice, the tissue remedies have done a world of good though the theory upon which it is based may not be all truth, but it cannot altogether be discarded as useless or unworthy of considerations. Dr. Schuessler uses only the 6th decimal trituration with the exception of *Ferrum Phos.* and *Calcarea fluorica* which he uses in the 12th decimal. The selection of a remedy is somewhat difficult and the success of a practitioner depends upon the accurate selection of the remedy.

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## EDITOR'S NOTES.

**A New Test for Albumin in Urine.**

Five parts of urine, diluted with ten or fifteen parts of water, is carefully floated on three parts of potassium iodide solution and two drops of acetic acid, 36 per cent., in a test-tube. In presence of albumin, a white ring is formed at the zone of contact; immediately if as much as 0.01 or 0.02 per cent. is present, and in two minutes with as little as 0.005 per cent.—*The North American Journal of Homœopathy*, January, 1910.

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**The Medical Man in Modern Society.**

Professor Debove, formerly dean of Paris Faculty of Medicine, recently delivered an address at the College Libre des Sciences Sociales on the position of the medical man in modern society. He showed to a good audience how medicine, which had originally to a great extent been identified with religious rites, had become a distinct science having intimate relations with other important branches of knowledge. Neither morality nor history, nor ethnography nor psychology could ignore medicine, and hygiene was a prominent feature in social science. These things are well known to all medical men; the important thing is that the public is becoming aware of them.—*The Lancet*, January 1, 1910.

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**Death after Recovery from Chloroform Anæsthesia.**

The pathology of the lesions which sometimes cause death at a late stage after the administration of chloroform has been studied by M. Aubertin, who has succeeded in reproducing the conditions experimentally. At a recent meeting of the Biological Society he said that after being kept under the influence of chloroform for one or two hours white rats and white mice died in the proportion of 7 to 10 at the end of a period varying from two to four days. No symptoms of jaundice were observed. At the necropsy hæmorrhages in all parts of the body were found. The liver was the organ principally affected; the kidneys, the lungs, and the muscular substance of the heart also exhibited changes but in a less degree.—*The Lancet*, January 1, 1910.

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### Professor David's Discovery.

Professor David, who occupies the chair of geology in the University of Sydney, and who accompanied Sir Ernest Shackleton to the Antarctic, has been making some interesting remarks on his discoveries there. The fossil woods he had found showed that pine forests had flourished in the vicinity of the South Pole at a remote geological epoch. The coal seams he had discovered suggested the same conclusion. At that time there was more or less continuous land from Australia to the South Pole. The climate all over the world was at that period probably much milder than at present.—*The Medical Counselor*, January, 1910.

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### Sterilization of Milk.

Sterilization of milk by means of ultra-violet rays is the latest scientific suggestion. It was made by Dr. Barille at a recent meeting of the Paris Academie des Sciences. Dr. Barille reported that pasteurization of milk causes a decomposition of the soluble double salt of calcium carbonophosphate into the two insoluble salts of calcium carbonate and bicalcium phosphate. These salts are accordingly precipitated and the milk is thereby impoverished in regard to its calcium contents. Dr. Barille pointed out that for infants this loss in calcium salts is a serious matter, as they play an important part in the bone formation and also in the gastric caseation and digestion of the milk.—*The Medical Counselor*, January, 1910.

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### Violent Deaths in Montreal during 1909.

Some 800 cases of violent and sudden death occurred in Montreal during the year 1909. This number is large than in recent years, but the majority of the cases were due to natural causes. There were no direct cases of murder during the year, but there were some half-dozen cases in which a verdict of manslaughter was returned. The suicides numbered seven. Street-car and railway accidents claimed the greater number of victims, there having been over 100 deaths caused by trains about the city and by the electric cars. Deaths by electrocution and by drowning were also high, reaching 60. Only three deaths occurred in factories, whilst fires caused the loss of 20 lives, and asphyxiation gas five.—*The Lancet*, March 5, 1910.

### Miner's Nystagmus.

All the conclusions of the late Mr. Simeon Snell are not accepted by those who see many of these cases. Dr. T. H. Butler points out that miner's nystagmus differs from ordinary nystagmus in that it gives rise to the subjective sensation of surrounding objects being in rapid movement, and to vertigo. It is essentially a colliery disease, and is not found among ore-miners, boiler-makers, nor employees in photographic plate factories, all of whom work in semi-darkness, and some of them in positions as cramped as those of the coal-miner. In the early stages of the disease nystagmus is elicited only when the eyes are turned up, and this does not cease when the head is thrown back, as some have maintained. True nystagmus must not be confounded with cases of asthenopia with nystagmoid movements.—The *British Homœopathic Review*, January, 1910.

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### What do we mean by Scrofula?

Before any scrofulous manifestations present themselves the condition of status lymphaticus obtains. This persists throughout the disease. As a result of infection by the tubercle bacillus a circumscribed focus of disease, one generally not recognized, is added to the constitutional anomaly. This causes an allergic state of the supersensitiveness of the skin, more especially for the tuberculo-toxin, so that the minutest quantity of the poison leads to the cutaneous and catarrhal changes, which are diagnostic of a scrofulous condition. Later, due to infection of the blood or lymph channels, metastatic foci, or even general tuberculosis, may be brought about. Escherich insists, however, that the well-known picture of scrofula is seen only when the primary lymphatic constitutions form a soil for its development.—(*Wien. Klin. Woch.*, 1909, No. 7.)—The *North American Journal of Homœopathy*, January, 1910.

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### Nitric Acid Intoxication and Cholera.

Emmerich (*Münch. med. Woch.*) propounds a curious theory—viz., that the intoxication of cholera is due to the nitric acid set free in the system by the action of the cholera vibrio in changing the nitrates of the food into nitrites. The starting point of this theory is the fact, pointed out by Petri, that the cholera vibrio has this power, and the author believes that foods such as cucumbers, radishes,

cabbages, turnips, &c., which are rich in nitrates, are acted upon in the body in this way by the bacillus of cholera. Moreover, these conclusions are equally applicable to cases of cholera nostras, and of infantile cholera, for the bacteria of both diseases have this acid-forming power. The *Bacillus coli* has the same action, but it normally only inhabits the large intestine, and to this region nitrates rarely penetrate. Occasionally, for purposes of radiography, massive doses of *subnitrate of bismuth* are given, at times with fatal results. Such fatal results are believed to be due to the fact that the drug has reached the large intestine unchanged, where contact with the *B. coli* has set up a fatal acid intoxication.—The *British Homœopathic Review*, January, 1910.

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### Fehling's Test for Sugar in the Urine.

Many substances, besides sugar, have the power of reducing Fehling's solution, though the reduction is seldom so great as it is in well-marked diabetes mellitus. Hence an erroneous diagnosis may occasionally be made if one relies entirely on Fehling's test without confirmation by the phenyl hydrazine hydrochloride test, and by fermentation with yeast. The reduction is in the great majority of cases due to excess of the salts of glycuronic acid. Drugs which act in this way are chloral, chlorol-hydrate, butyl-chloral-hydrate, camphor, carbolic acid, salicylic acid and its derivatives, antipyrine and drugs of that series, morphine, preparations of liquorice amyl nitrite, volatile oils, carbonic oxide, sulphuric acid, prussic acid, mercury and lead.—The *North American Journal of Homœopathy*, January, 1910.

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### Pellagra.

This disease was first noticed as occurring among the field labourers of Northern Italy. It is a chronic malady, and chiefly affects the cultivators of the soil. It usually commences in the spring with symptoms of general malaise, accompanied by a red rash upon the uncovered parts of the skin of the body, looking like sunburn. The symptoms disappear about July or August, to reappear the next spring, and with increasing severity each successive year. In time the patient's health becomes completely undermined, he looks like a mummy, with his skin shrivelled and sallow, his muscles wasted, his movements slow and languid, and his sensibility diminished.

Profound disorganization of the nervous system follows, there are partial paralyses, and mental symptoms ensue, such as melancholy, imbecility, and mania; so that a large number of peasants with the disease end their days in lunatic asylums. Autopsies show general tissue degeneration of the brain and nervous system.—The *British Homœopathic Review*, March, 1910.

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### The poisonous properties of coal.

The poisonous properties of coal gas are generally attributed to its content of carbonic oxide, especially as no other substance of known poisonous properties has been found in it, and patients suffering from coal gas poisoning show the symptoms associated with the inhalation of carbonic oxide, including the peculiar bright red color of the blood. From experiments made by Dr. von Vahlen, at Halle, it seems probable that we must revise this view, for on making experiments with frogs, animals particularly resistant to carbonic oxide it was found that they were poisoned far more rapidly by coal gas than by the corresponding amount of the oxide. Other experiments with dogs showed that the poisonous effect of coal gas was twice or three times as great as that of the carbonic oxide it contained. Evidently there is some other constituent of coal gas which is poisonous, though what it is cannot yet be stated. Merely removing the carbonic oxide from coal gas will not suffice to render it non-poisonous.—The *Medical Counselor*, January, 1910.

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### The Feeding of School Children.

Dr. Bernhardt, a medical officer to the Berlin municipal schools, has carried out an investigation into the feeding of children of some schools in the centre of Berlin. The investigation was continued for four years, and included 8451 children. He found that 6.8 per cent. of the children came to school without breakfast. In the majority of cases this was due to negligence or drunkenness of the mother. Many children received only black coffee or dry bread; in one case, that of a boy aged 7 years, the breakfast consisted of a mineral water. In the minority of cases only the parents were too poor to procure breakfast. This was the case in a girl, 12 years of age, who not only had to cook for her father and her brothers and sisters and to look after their dwelling but also did the work of her sick mother as a charwoman. The girl worked from 5 o'clock in the morning till nearly midnight, and it was her uncontrollable

sleepiness during lesson hours that drew the attention of the teacher to her domestic conditions. It was found also that some hundred children got their dinner between 6 and 8 o'clock in the evening, six of them between 8 and 9, and seven between 9 and 10. During the day the children received coffee and bread-and-butter. In a very few cases there was no dinner at all, but only coffee, bread, and potatoes were given. Dr. Bernhardt recommended that breakfast should be given on behalf of the school on a larger scale than had hitherto been the case, and that the school should begin at a later hour to allow the children longer time for sleep.—*The Lancet*, March 26, 1910.

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### Treatment of Diabetes as an Infectious Disease.

A King says that he has been able to obtain a pure culture of *Saccharomyces cerevisiae* from the blood in every case of diabetes he has examined since his attention was drawn to the possible infectious nature of the disease. His general conclusion is thus stated: Because diabetes is a disease of fermentation, because the yeast fungus is found in the blood, because its actions explain all the symptoms as well as the pathological conditions, because the patients show a disturbed power of resistance to this fungus, and because this lowered resistance is increased by treatment with vaccine, he believes this yeast fungus is the cause of diabetes and that it should be treated as an infectious disease. As to treatment he notes the indications to be restoration of resisting power, removal of causes and of complications. The lowered resistance may be removed by the action of vaccines and the careful regulation of the diet. In the diet, some starch food should be used to prevent other fermentations of fats and albuminoids, which give rise to more serious toxic substances. The destruction or removal of the cause may be accomplished by the use of antiseptics, by increasing the phagocytic action of the leucocytes, and by maintaining a healthy activity of the kidneys. To prevent, relieve, or remove the complications there must be a relief from mental worry, a careful regulation of the diet, a promotion of oxydation by the use of these remedies which will improve the oxygen-carrying function of the blood, and by deep breathing exercises in fresh air, which at the same time assist in the removal of the excessive amount of carbonic gas from the body.—*The North American Journal of Homoeopathy*, January, 1910.

### **A hitherto unrecognised Constituent of Tobacco Smoke.**

The toxic constituents of tobacco smoke would appear to be legion, and recently one other quite definite substance has been added to the number, although there is no proof that it is a directly poisonous substance. The category hitherto included a formidable array of poisonous substances such as carbon monoxide, prussic acid, nicotine, pyridine, sulphuretted hydrogen, carbonic acid, and so forth, and now it may be easily demonstrated that there are present also thiocyanates or sulphocyanides presumably of ammonia. It is well known, of course, that sulphocyanide of potassium is usually a constituent of saliva, but its rôle apparently has not been defined. Although, however, cyanogen is present in the salt it does not appear to be poisonous for in the modern language of the ionic theory the cyanogen group is combined with sulphur to form the anion SCN. The cyanates are similarly non-poisonous since the anion is not CN but OCN. Arsenic and mercury, again, are relatively speaking non-toxic in the form of complex salts such as the cacodylates, atoxyl, and so forth, because the arsenic and mercury exist in a complex ion instead of, as in the case of the arsenites or mercurials, in a simple ion in which the identity of the metal is not lost. The new discovery does not therefore necessarily intensify the evils of tobacco smoking.—*The Lancet*, March 5, 1910.

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### **Baron Garofalo on the Latin and Teutonic Races.**

No one speaks with more authority in Italy, or even in Europe, on ethnological distinctions than the Senator, Baron Raffaele Garofalo, sometimes professor of criminology in the University of Naples, now head of the Administration of Justice at Venice. Lecturing in Milan the other day to a distinguished audience—his theme "The Latin and the Anglo-Saxon Civilisation"—he read his compatriots a severe, if salutary, lesson on their defects, moral and intellectual, defects which are but feebly made good by the education which in Italy contrasts so unfavourably with that enjoyed by the British or North American youth. He dwelt on the emotional susceptibility of the Latin, particularly the Italian, subject, so easily swayed by appeals to the passions, so wanting in respect to legal authority, so deficient in that "sense of citizenship", which controls political, even municipal, movement in the British Isles. "What you want," said Garibaldi some 30 years ago to an audience of modern Romans, "is the English steadiness," the power of "thinking twice"

before acting on a seductive theory and committing one's self to the "popularis aura," heedless of the direction in which it blows. "Ill-inspired enthusiasm," Baron Garofalo maintained, is responsible for the ineffectiveness of public life in the Italian, as in the cognate races, and in illustration of this he showed the evil consequences of recent legislation, conceding privileges and indulgences to a proletariat not educated enough to appreciate them or to turn them to wholesome account. The "riposo festivo," for instance, or Italy's new equivalent to the "day of rest" traditional in the British Isles, he denounced as a premature concession to the masses, with whom it had come to mean only another opportunity for dissipation, to the advantage of the liquor trade and the purveyors of more than questionable forms of entertainment, issuing in the increase of that new curse of Italy, alcoholism, and of that old, old sin of the Latin races, premature sexual indulgence. The lecture, as reported in the daily press, has evoked from radical and moderate parties alike a cordial welcome, reinforcing, as it cannot fail to do, the educational reforms which, beginning with the family, will gradually leaven the municipal and civic life, and after this the nation as a whole.—*The Lancet*, March 26, 1910.

### A Centenarian Doctor.

The hundredth anniversary of the birthday of M. Jean Charles Boullé, described by some of the Paris journals as the *doyen* of French medical practitioners has just been celebrated at Saint Valérien, near Sens. The proceedings consisted of the presentation of an address by the municipality, the mayor, accompanied by all the municipal bodies, waiting upon the venerable physician at his residence, the exterior of which was decorated in honour of the event. Afterwards all the school children of the district waited upon Dr. Boullé, who, after receiving them, entertained them at dinner at the *mairie*. A banquet was also given, at which the under Perfect, M. Blachon, presided, covers being laid for 150 guests. The Minister of Instruction was represented and the local Parliamentary representatives were present. The usual speeches followed, and it was announced that the Academy of Medicine had appointed Dr. Boullé an officer. The doctor, who has an *aspect chétif*, is still alert and erect, with a long white beard. Replying to the congratulations of the company, Dr. Boullé became reminiscent. "My father and my grandfather," he said, "were in practice in this

district before me; in other words, the sick of the neighbourhood since 1760 have been under the care of my family. In my father's time we led the life of peasants, living more on potatoes than joints of meat. My father when he was not attending to the sick cultivated his land. In this modest way he reared six children, all of whom, I am proud to say, did well. My first preceptor in medicine was Dr. Retif of Sens. In the autumn of 1828 I went to Paris to complete my studies. I lived in the Latin quarter and paid 5 francs a month for a bedroom and study. I was in Paris during the troubles of 1830 but I took no side. After 1848 I was elected Republican mayor Saint Valérien. In 1851 I protested against the *coup d'état*. I escaped arrest, for my adversaries interceded for me. I saw '70. Prussian soldiers occupied this place. It was a sad time." It was only two years ago that this veteran took an active part in saving his books and papers when his house was on fire. He attributes his health and longevity to eating and drinking with moderation to the pure air of Burgundy, and to the active life which he has led. His youngest son, a doctor of medicine, 67 years of age, was present at the banquet. Dr. Boullé later presided at a ball given in his honour.—The *Lancet*, March 26, 1910.

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### Football in the United States.

"Statistics were compiled a short time ago showing that football had been responsible for 30 deaths and for 216 cases of serious injury during the season up to date." Thus writes an American correspondent, but as he does not give the date we do not know exactly over how long a period this list of casualties is spread. But however long it may be it seems to us to be appalling. In 1901 statistics in regard to accidents at football in the United States were first gathered and the casualty list quoted above is the largest since the collection of statistics and most probably the largest ever known. Of the 30 killed, 8 were college students, 20 were pupils of high schools, and 2 were members of athletic clubs. Of those injured, the list included 25 injured internally, 19 cases of concussion of the brain, 19 cases of broken ribs, and the same number of dislocated ankles. 15 legs and 9 arms were broken, while there was a long and formidable list of less grave injuries. When the fact is taken into consideration that the length of the football season in the United States is not two months and that the game is only played by the universities, colleges, and some of the



schools, the figures denoting the accidents during the past season will take on an even more serious aspect. The general public of the United States is aroused at the recent fatalities and demands have come from all parts of the country that the game as now played be either abolished or reformed in such a manner that serious accidents be rendered if not impossible at all events of rare occurrence. A few universities have given up the game, Columbia University, New York, has done so, and the Board of Education of New York has prohibited the playing of American football in the schools under its control. The *New York Medical Record*, referring to the matter in an editorial, December 4th, 1909, recognises that public sentiment is strongly against a continuance of the game in its present form, but also recognises the difficulty of making changes which, while preserving the salient features of the game, will rob it of its most dangerous points. A few years ago alterations were introduced which it was thought would have the desired effect. After the introduction of these forms for two or three seasons there were fewer accidents, but as coaches and players learned methods of avoiding the new rules fatalities became more frequent than before, until in the past season they have reached their climax. A proposition has been advanced that a rule be adopted to enable the referee to order from the field any man whom he deems to be physically incompetent. The American game of football is so different from the games played in Great Britain that there are scarcely any points of comparison, and therefore it is very difficult for English readers to comprehend the numerous obstacles in the way of a radical and an effective reform. While American football is strenuous and even brutal, it is more seriously strategic than British football. Football in Great Britain is a game, and nothing more, leaving out the wage question; football in America is a game to a certain extent, but it more closely resembles a stern fight, in which both sides leave no stone unturned to win, and if the object can only be attained by putting opponents out of action by rendering them *hors de combat*, then this course is pursued. However, the general public in the United States appears resolved to insist upon changes in the game tending to make it less dangerous to life and limb, and as many of the heads and professors of universities and colleges are of the same mind there is little doubt that reforms will be introduced.—The *Lancet*, January 1, 1910.

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## CLINICAL RECORD.

### Foreign.

#### A CLINICAL CASE.

By J. B. S. KING, M. D.

E. J. L., aged 29, large, robust physique, sandy hair, ruddy complexion. Attacks of severe abdominal pain.

Pain is described as tearing, stretching, twisting, like colic. The location is mostly across the upper part of the abdomen.

It is caused by going out into the cold air. Comes on suddenly on exposure to cold.

Aggravated by lying down.

Better by warm drinks or in a warm room.

Better by eating.

Better by standing or stretching himself very erect.

Better by belching wind.

The pain was subject to sudden changes of location, going to the back or testicles and then being unbearable.

Awakes often with a bad or bitter taste.

Soreness in tongue and in the roof of the mouth.

Frequent nocturnal emissions always worse if he eats sweets.

Itching and burning in the rectum and nose, at times. This would occur by spells lasting a week or more; he generally took crude Santonin for them and it would relieve.

The remedy for this case was found in less than five minutes, without consulting any repertory and with only a moment's look at the materia medica. The remedy was entirely successful and left nothing to be desired in the way of rapid action or of completeness of results.

It is a common experience in life that we do things without knowing how, unless we examine and analyze our motive and mental processes. The recent discussion in the *MEDICAL ADVANCE* between Drs. Freeman, Turner and others as to the method of finding the simillimum has been read and studied by the writer with the greatest interest and profit, and remembering the above case and knowing that the correct remedy had been found in five minutes or less, he referred back to it to see just what was the *modus operandi*—the mental process by which it was done.

When the patient said that "he was subject to awful attacks of collic across the stomach" he was asked what he did to relieve the pain, with the expectation that he would say that he doubled up or pressed on his abdomen after the manner of colicky patients. On the contrary he replied that nothing relieved him like standing erect or stretching out. When he said that, *Colocynth* that had come to the mind of the doctor was immediately rejected and the right remedy immediately took its place.

If, at this point the medicine had been given and the case dismissed for further report, it would have been a flagrant instance of key-note prescribing, and while it would have been correct in this case nevertheless the method often leads, as Carrol Dunham said, to "atrocious blunders."

Further questioning elicited the modalities given above. The remedy was now turned to in the *materia medica* and it was found to have:

Bitter, nasty taste; tongue sore.

Troubles after errors in diet.

Belching of wind with partial relief. Belching relieves.

Steady twisting pain in the bowels worse lying down.

Colic worse lying down, better by stretching or by rising and walking.

The pains often jump from place to place, especially to a distant part.

Emissions during sleep.

• Dull pain in the lumbar region, extending to the testicles.

Sharp pains in various parts of the body, jumping from place to place.

Itching and burning of various parts.

It was entirely unnecessary to go any farther. *Dioscorea* fitted the case in every particular. It is no argument against repertories that none was used to find the remedy. The prescriber happened to have in his memory the very peculiar and unusual modality that characterizes *Dioscorea* and that once known the rest was easy.

• The patient had two distinct modalities that are not to be found in the pathogenesis of this remedy, namely relief from eating and aggravation from the cold. Indeed the symptom better in the open air is given as one of its modalities. This shows that the generals

are not so important as many would have us believe, for amelioration in the open air is a general and not a particular symptom and yet the numerous particulars in which the remedy agreed with the patient overcame it completely.

*Dioscorea* seems to have been but little used in homœopathic practice, judging by the cases recorded in our literature. It should be thought of in sciatica as well as in colic, and would often render valuable aid when *Bryonia* has carried a case along well, yet without curing it. Dr. B. LeB. Baylies records a case with pains in the umbilical region, shooting through the abdomen and towards the spine, with nausea, and no better by flexing the body, which was speedily and completely cured by *Dioscorea* in the 39th centesimal. This careful prescriber also speaks of a case with distressing pain for hours after stool, continued aching at anus, with protrusion of hemorrhoids and pain down the back of the thighs, greatly relieved by one dose of *Dioscorea* 30th.—The *Medical Advance*, February, 1910.

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#### CLINICAL NOTES.

By A. E. HAWKES, M.D.

*Hon. Medical Officer, Hahnemann Hospital, Liverpool.*

SEPTIC THROAT.—A few weeks ago Nurse——, while attending on a case of colotomy, contracted a severe sore throat. The pulse ran up, the temperature was 101·5° F., and the tonsils were both affected with follicular inflammation. She had had no prior experience of homœopathy, but willingly took the *ailanthus* 1x I mixed for her, about one-third of a drop for a dose, and in thirty-six hours she was quite well. She had already seen the good effect of *veratrum* 3x during attacks of colic, to which, together with some diarrhœa, her patient was subject.

She, however, came to use the *veratrum* under circumstances somewhat differing from those originally calling for its exhibition and it had to be pointed out to her that the discomforts of an attack of icterus were more likely to be relieved by *merc. dulc.*, which was accordingly given with advantage. She had early to learn that empiricism and homœopathy are not quite the same thing. This nurse's first contact with homœopathy has favourably impressed her, and she is very anxious to watch its effect in cases of actual disease.

**APEX PNEUMONIA.**—Some few weeks ago I attended a young man, aged 23. His right apex was dull, and his temperature 103°F.; moreover, there was a fair quantity of blood in the expectoration. *Phosphs.* 2 was the chief remedy, and it acted admirably. but the hæmoptysis required a few doses of *millefolium* ix, and the remaining dulness gradually cleared up under *iodium* 3x. The clear, green expectoration was carefully examined for the tubercle bacillus with negative results.

I have recently seen a lady whom I treated some years ago with the same remedies for similar dulness and general symptoms. She has gained flesh and is quite well, although she seemed long ago to be threatened with phthisis.

**URETHRAL FEVER.**—A gentleman, aged 74, who has long needed to use a catheter habitually, had a rigor; his pulse was rapid—110—and his temperature 102° F. He was very thirsty and his skin was dry. A few doses of *aconite* ix, about one-third of a drop every hour, removed those symptoms in twenty-four hours.—*The British Homœopathic Review*, January, 1910.

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## Gleanings from Contemporary Literature.

### SOME OBSERVATIONS ON THE TREATMENT OF LUPUS VULGARIS.

DR. LE HUNTE COOPER.

Now that so much work is being done in the local treatment of lupus and other growths with radiotherapy and electrolysis, &c., the vital necessity for combating the constitutional taint which is responsible for such surface manifestations is for the most part entirely overlooked. Too often the patient, and I regret to say the physician, rests content with the disappearance of what is obvious to the vision, or the touch, and overlooks the fact that such a result by no means warrants the assumption that the patient is out of danger. How far the claim made for radium, that its local action on a malignant growth is attended by a constitutional effect, is justified, remains to be proved, but the cases, so far published, by no means satisfy me that such an assumption is correct, owing to the fact that they are all of too recent date to prove that the patient is in the true sense of the word "cured." The removal of a local growth by rays has one great advantage over excision with the knife, in that the local resistance of the normal healthy tissue is stimulated in the former case, whereas this is not so when the knife is employed. On the contrary, the local healthy cells are necessarily devitalized by traumatism in the latter case. However, this local effect of the rays is very different from a generalized systemic one, and it is in my opinion our duty in our patients' interests to avoid a sole dependence on any local measures for the cure of local conditions which are manifestly not the disease itself in its entirety, but merely indications of a generalized dyscrasia.

Of course, all such considerations are of no advantage to the old school, because they have no means at their disposal to cope with such constitutional states, unless the feeble and unscientific attempts to stimulate the organism by the administration of so-called "tonics" may be classed as such. True, their more advanced observers, who are slowly and laboriously re-discovering homeopathy by the help of the microscope, have made some headway in this direction, but it is only in one limited path, and it seems likely that many years will yet elapse before the bearing of these researches on the treatment of disease in general with remedies other than nosodal will be fully grasped.

On the other hand, the removal of local manifestations with internal remedies stands on an entirely different footing, for the organism itself either throws off or absorbs the morbid process, aided by the stimulation of the drug employed. But, before it can do so, the constitutional dyscrasia must be overcome; hence its results are permanent, and the process is altogether a more scientific one, and one which is in far closer accord with the natural laws governing the human organism. My own

experience is that when a growth is finally dispersed in this way it neither tends to return in the same situation, nor is there any appreciable danger of its recurrence elsewhere throughout the system.

It is not always possible to stimulate the remedial powers of the body, so far as to induce entire dispersal of local morbid growths, as many circumstances, such as depressed vitality, the long duration of the disease, &c., may act detrimentally to this desired consummation. In such cases one is justified in using local measures which will tend to assist the process by destroying the morbid tissue and stimulating the surrounding healthy cells to increased activity. Under such circumstances reasonable hope of complete cure is amply justified, for the disease has been attacked both at its centre and periphery.

It must be generally admitted that the cure of lupus by internal remedies is one of great difficulty even to homœopathy, and it is, of course, considered incurable by such means by the old school. It is for this reason that I consider I am justified in publishing the cases given below, for though they are by no means ideal for this purpose, they may yet be of assistance to those having similar cases to deal with.

My first case is, I regret to say, not as clear cut as I should like, owing to the fact that intercurrent conditions such as acute attacks of bronchitis, influenza, ague, and gout, required remedies other than those which must be regarded as essentially responsible for the relief of the main trouble. Nevertheless, my observations on the treatment of it were responsible for the cure of the second case, so that they were by no means valueless. This patient had previously been under the care of my late father for a short time; he was a retired army officer, aged 66, of dark complexion and active habits, and I first made his acquaintance in September, 1903. I found him suffering from a lupus patch on the right side of the nose, which he told me had appeared three years before. It had been operated on (apparently by scraping), but as the surgeon was an allopath, no constitutional medicinal treatment was employed, and the trouble broke out again, and rapidly advanced up to the time my late father took him in hand.

I found an ulcer about 2 by 2 cm., involving the right ala of the nose; its upper and outer edges were marked by raised, smooth masses, over which small vessels could be seen coursing, while its inner edge was flattened and slightly cicatricial. A brownish scab covered the ulcer, and from fissures in this a slight watery discharge oozed. Later on, when the scab fell, I found that in depth the greater part of the tissue of the nose was involved, and that the floor of the ulcer was covered by unhealthy-looking granulations. The internal surface of the nostril was raised into a convex projection corresponding with the base of the ulcer. Anterior to this ulcer and 1 cm. above the tip of the nose were two red projections, suspiciously like fresh points of in-

fection ; and another such projection could be seen higher up on the bridge of the nose.

The skin of the face generally was somewhat greasy, especially in the vicinity of the naso-labial folds, where numerous blocked sebaceous glands were evidenced by the black points commonly called "black heads."

For the rest, the patient was of the Anglo Indian type, of sallow complexion, and subject to liver attacks. He had suffered severely from malaria while abroad, which still at times showed itself in slight pyrexial attacks, lasting for a few hours, and occasionally attended by some slight shivering. Added to this, he had suffered for years from chronic bronchitis and emphysema, and was obviously gouty. He was also a great sufferer from corns.

I commenced treatment with *Sulph.*, followed later by *fer. pic.*, with benefit to his general health, but no manifest change was noticeable in the ulcer till *Thuja* 3x was given three times a day. The effect of this was to greatly aggravate the irritation in the ulcer for a few days, but after this the nose felt more comfortable ; at the same time the bowels began acting better than for a long time past. After this a cold, followed by aggravation of the bronchial symptoms, required attention till February 12, 1904, when I again gave *Thuja*, but this time in unit dose *Thuja A*.

March 4, 1904.—He said he had felt the ulcer stirred up very shortly after the dose. It irritated for three to four days, but had not done so lately. On examination I found a slight, though decided, improvement in the ulcer, the lump at the side being smaller, and its general appearance was certainly better. However, though the next dose of the same remedy was followed by similar results, the drug after this apparently lost its effect, and the sore began to spread again.

The system could only make feeble, and more or less ineffective, attempts to combat the disease, and it was fairly obvious that some restraining influence was at work which prevented the remedies from acting.

Whenever one is brought to a deadlock like this, it is well to look round for some deeply acting constitutional remedy with which to attack the obstruction, and it is on such occasions that the nosodes become such valuable allies from whom to seek support. I therefore decided to call in the aid of *tub. K*. 200 medicated in thirds, though my practice now is to give this remedy at much longer intervals. This I commenced on May 27, 1904.

Three weeks later I found the two nodules above the tip of the nose were less red, and that on the bridge had become dried up and warty in character. The ulcer had also bled at times, this not having previously been observed ; added to which the patient's general health had improved.

After this, a continuance of the remedy failed to produce any marked change, though the condition was held in check. As I now had attacked



the obstruction, I considered that a return to a more superficially indicated remedy might be attempted with greater hope of success, and, guided by the warty character of the nodule on the nose, the general tendency of the patient to corns and warts, and the old malarial dyscrasia, I decided on October 7, 1904, to give *ser. pic.* 3 x, *t.d.s.*

A fortnight later, I was gratified to find that *the warty excrescence on the bridge of the nose had dropped off*. The raised margins of the ulcer had dried to a certain extent, and they now looked less vascular and more wartlike in appearance; added to which, the whole ulcer appeared less active, and the lump inside the nose was smaller, as the patient himself detected. Continue.

A fortnight later.—Pieces of thick crust have fallen, *leaving no appearance of discharge beneath*. The ulcer is altogether smaller and not nearly so inflamed, and the raised portions are still less active. Continue.

December 9 (six weeks later). My notes show that the nose was looking ever so much better, and *the ulcer was filling up from below, there being now no discharging surface*. The place where the excrescence dropped from the bridge was only marked by a little roughened skin, and the former raised portions at the sides of the ulcer were represented only by two small semi-vascular projections on the outer lower and outer upper corners respectively.

Unfortunately, after this, owing to several attacks of influenza pulling the patient down considerably, the trouble in the nose broke out afresh, and his system appeared incapable of dealing with the disease unaided by local measures. I therefore called in the aid of Dr. Ashton, who obtained some slight improvement with the Flusén light, though attacks of gout and ague kept him back.

Dr. Ashton then retired from practice, and Mr. Dudley Wright carried on the local treatment, finally resorting to zinc electrolysis, the medicinal treatment being of course continued at the same time. To cut a long story short, these combined measures resulted in the final healing of the ulcer, but the patient eventually succumbed to an attack of pneumonia, which his already weakened lungs were powerless to resist. I may say that early in this case tubercle bacilli were found in the discharge from the ulcer.

It must be admitted that this man was immensely handicapped by his numerous dyscrasie, any one of which was ready to assert itself whenever the opportunity, afforded by some extraneous devitalizing cause, presented itself. Had this not been so, one is justified in believing, by the marked improvement which followed the treatment at first, and by the evidence afforded by the case which I am about to detail, that he would have entirely recovered long before without any local measures being necessary.

On October 15, 1904, a lady, aged 73, of dark complexion, active disposition, and spare habit, was sent by a friend of hers to consult me

for lumps of the face, for which treatment had proved ineffectual for four years. She said she would not have come of her own accord, as she had long since given up all hopes of obtaining relief.

It had apparently first come as a nodule on the side of the left cheek, which was thought at the time to be due to some hair-dye she was using.

There was a history of a blow and lacerated wound on the left temple a year before this appeared, but none was forthcoming of traumatism directly affecting the left cheek. This nodule had broken down into an ulcer, which had steadily spread in spite of homœopathic and other treatment.

I found a large, filthy-looking ulcer covering an area over the horizontal ramus of the jaw of no less than  $2\frac{1}{2}$  by  $1\frac{1}{2}$  in. Large warty-looking scabs covered two-thirds of its area at its anterior end, and deep ulceration was visible in the remaining third. From the latter, and from beneath the scabs, a thin, dark, offensive discharge oozed.

I was at once struck by the similarity of the skin of the face of this patient to that of the patient last described, only it was more greasy, and there were many more blocked sebaceous glands than in the former case. Indeed, the condition of the skin of the face, quite apart from the ulcer, made this patient positively revolting to look upon.

A slight amount of pain was felt in the ulcer, and there was a marked tendency to warts and corns, the latter even affecting the soles of the feet. One large, black, sessile wart was present on the back, and there were others of a similar character, though smaller, on both cheeks. The skin of the rest of the body tended to be too dry. The appetite was bad, with dry mouth, slightly coated tongue, and sore gums.

She said that her family had for the most part been unhealthy, her father having died from an abdominal tumour, and her mother from heart disease.

I directed her to keep the ulcer protected with a layer of dry boracic lint, and opened the campaign with *psor.* 30, medicated in thirds.

A fortnight later.—She described herself as feeling better, though she had suffered more pain in the ulcer, which had discharged more freely.

Some idea as to the character of this discharge may be gleaned from the fact that I noted at the time that it "smelt like a pigsty." I found that some black scabs had fallen, and the skin of the face looked somewhat better.

A fortnight later.—As no marked change was noticeable, I decided to give *tub. K.* 200 every night.

The patient unfortunately lived at a distance and could only come up to see me occasionally, so I had to depend upon written reports; and her observations on the local conditions were unfortunately worthless, as I discovered later.

A fortnight later (November 26).—She wrote to say that the ulcer was much the same, except for increased pain and continuous discharge. *Fer pic.* 6x, every night.

A fortnight later (by letter).—Face very uncomfortable, *I cannot bear anything to touch it*, and the discharge is, I think, more in quantity.

This activity I regarded as favourable, though I could not be absolutely certain of this without seeing the patient. I continued the remedy.

A fortnight later.—Still good deal of pain. She does not notice any local change. *Bacil.* 200, unit. In a week resume *fer. pic.*

The reports after this continued much as before, and I continued the *fer. pic.* only, till February 3, 1905, when I had the opportunity of seeing the patient, and then found to my gratification that the ulcer showed *unmistakable signs of contraction.* Continue.

February 21 (fortnight later, by letter).—Less pain, though still a good deal of discharge. *Tub. K.* 200, once a week.

Fortnight later (by letter).—Cannot detect any change in the ulcer. *More pain the last few days. Feeling better in general health. Fer. pic. 6x, t.d.s. Tub. K.* 200 unit, in a week's time.

Fortnight later (March 23).—She again came to see me, and I found that 'contrary to her own observations the ulcer *was very markedly smaller.* A small scab over the left side was all that remained of the previous masses, the rest of the ulcer being much cleaner in appearance. *Fer. pic. 6x, t.d.s.*

Fortnight later.—Less painful. *Bacil.* 200, unit.

Fortnight later.—I found that the whole ulcer was protected by a thin scab, and that it had still further contracted. Discharge now is much less.

It would waste your time if I detailed any more reports, so I will content myself with saying that the healing action thus started continued without interruption to complete cure, though some other general symptoms required such remedies as *merc. sol., sulph., ayrap. nut, lobel., puls.,* and *nux.* The healing continued from left to right, leaving a lineal scar to mark its track, and on October 5, 1907, the last scab, which covered the extreme right of the ulcer, fell, leaving a clean scar to mark its former position.

The skin of the face was so much improved and her appearance thereby so altered that all her friends were astonished at the change. The skin was now no longer greasy, and the blocked sebaceous glands were much less noticeable. Added to which her general health was very greatly improved. When I last heard from this patient, last year, she was in excellent health, and there had been no further trouble with the face.

*Remarks.*—In both these cases I ascribe the cure of the disease mainly to *fer. pic.*, assisted by *tub K.*; and have reason to believe, from watching the respective action of each, that neither alone would have brought about the desired result, and this is further borne out in the case of one of these remedies by the fact, which I afterwards discovered, that both cases had been given *fer. pic.* before coming under me, but no nosodes.

Cases like these necessarily take long to cure, and need a good deal of patience in their treatment, the rule, in my experience, being a fairly constant one, that the longer a disease takes to develop the longer it takes to cure, and *vice versa*. The respective ages of the patients, 66 and 73, necessarily made recovery slower, as did the general ill-health of the first patient.

Finally, I should advise for future cases of this disease the administration of *tub. K.* 200, in unit doses at long intervals, and *fer. pic.* low (about 3x), as frequently as three times a day, though, of course, if other remedies were better indicated they should be given the preference.—*The British Homœopathic Review*, March, 1910.

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## THE INVETERATE VOMITING OF PREGNANCY. A CASE WITH ANNOTATIONS.

BY GEORGE BURFORD, M.B.

*Senior Physician for Diseases of Women to the London Homœopathic Hospital.*

One by one the pillars of that remarkable but badly founded edifice of "distant reflexes" is being removed by the ceaseless efforts of physiological chemistry. The latest to go is that flying buttress, the "reflex vomiting of pregnancy" which has fled into the *Enigkeit* as the advance of the new hepato-paucreatic chemistry covers more ground. The venue is changed from the "unstable currents of the nervous system" to the more tangible if still somewhat elusive "toxæmia"; and the validation of the change is the wider outlook and the increasing issues of the treatment thus founded.

The alteration is somewhat sweeping from "utero-ovarian irritation" to "acidosis" and its congeners; but the new humoral pathology will have none other, and the validation, I repeat, is in the expanding vista of successful treatment thus disclosed. Yet it takes a little time for the mind to execute this *volte-face*, and from the new standpoint to think in new terms. But the advance is enormous. Up to this twentieth century every unfortunate woman afflicted with the so-called "malignant sickness of pregnancy"—the inveterate vomiting of the later months—died! the condition was as fatal as cancer. Some of the heaviest stresses of my consultative life have been these cases, the responsibility for which I have been called on to share with my colleagues. After the assiduous but useless exhibition of *phosphorus*, *arsenicum*, the *serpent-poisons*, *iris* and other hepatics, I have opened the abdomen, explored the gall-bladder and biliary passages, instituted a free efflux of bile from the *cholecyst* externally, but all to no purpose. I have practised intravenous saline transfusion, again and again but with only a fleeting benefit. A temporary rally, an increased renal reaction, but in a few

hours the symptoms of gravity returned with all their former stress, and *exitus letalis* came with winged feet.

Now in this year of grace 1910, how different the scene! The physiological chemist has exorcised Death with his sting where previously he had been supreme. The malignant vomiting of pregnancy has been shown to be concurrent with the presence of acetone and diacetic acid in the urine; and the ingestion of bicarbonate of soda, in limited but sufficient dose, will eliminate the acetone factor and banish the vomiting within a week. I have, with my colleague, Dr. Wynne Thomas recorded just such a dramatic case. A family and personal history of renal inadequacy, inveterate vomiting, threatening to be lethal alike to embryo and mother—acetone and diacetic acid demonstrated in the urine—the traumatic termination of pregnancy apparently the forlorn hope—and lo! the whole situation was dramatically resolved by the simple expedient of sipping bicarbonate of soda solution for few days. This brought about physical salvation—in a week the almost derelict patient was practically well. “Utero-ovarian irritation” had left many such as these—foetus, or mother, or both, to die; “acidosis,” however crudely, had saved the situation promptly and thoroughly.

I have stated that the modernity of the bio-chemical views accounts for the hitherto limited succour thus obtained in the visceral affections of pregnancy. Naturally, none are more desirous for progress than the unfortunate sufferers themselves, but few are gifted with the initiative to pursue the investigation in their own case. Dr. E. Petrie Hoyle and myself have been conjointly responsible for a case where in each pregnancy nausea and vomiting were far more distressing than is usual. Both Dr. Hoyle and myself had independently worked out the symptoms on repertory lines, many a time and oft, but with only passing amelioration. In an earlier pregnancy the patient had had the advantage of the professional skill of Professor I. W. Ward, of San Francisco. His results were as ours.

The lady herself is a personality of remarkable intellectual gifts, and takes a keen interest in the problems of the medical art. By chance she came upon the narration of the case of Dr. Thomas and myself in a former number of the REVIEW, and her interest was aflame. In due course history again provided her with personal material for reflection. Though neither acetone nor diuretic acid were found, I had already systematically carried out the *natrum-bicarbonate* treatment—repertorizing proving of none effect—but with no tangible results. Now her courage rose with her distress; she boldly experimented on herself with the *bicarbonate* in massive doses, inspired by a belief in its efficacy for her; and now I will quote Dr. Hoyle's personal account.

“She took as much as 640 gr. of bicarbonate of soda *per diem* for several consecutive days, after trials of 10 gr., 20 gr., and up to 100 gr. at a dose, with absolutely no effect.

.. "The dosage which gave immediate and steady relief was a teaspoonful of *sodæ bicarb.*, which dose, carefully weighed, subsequently was found to average 160 grs. The method ultimately found of most value was this amount taken in half a tumbler of soda-water just before meals. This gave an immediate sensation of relief, at once allaying the heartburn, nausea, with disgusting taste as of rancid tallow, and allowing the patient to take a comfortable meal. This rancid tallow (oxybutyric acid) taste was, next to the incessant nausea, the most distressing feature of the case, and a few such doses of *bicarbonate* banished this odious symptom.

"After about one week the dose of bicarbonate was reduced in frequency to once or twice daily, as a preventive measure, and the pregnancy thus proceeded from about the fourth month to the eighth, with no further gastric distress. In previous pregnancies this had persisted almost without break. At the end of the eighth month the oxybutyric eructations and the sense of nausea returned; a few doses of bicarbonate given to the same extent as at first banished these recurrences entirely in two or three days.

"The subsequent history of the case you personally are acquainted with."

My contribution to the subsequent history is that the lady came to town for her accouchement, having had the misfortune to lose her last baby during childbirth. On this occasion she was more fortunate; the child was born at term almost without a pang, and weighed 9½ lbs. The infant gained 8 oz. in weight during the first week on breast milk only, and has continued to thrive. The puerperium was practically normal, the most noticeable feature being a passing lactosuria, discovered on the sixth day, and for which *chelidonium* in low dilution was prescribed with excellent results.

Dr. Hoyle thus anticipates criticism as to the massive dose employed—

"The dosage adopted in this pregnancy was so considerable that we have set it down at your request; but this amount was only arrived at after two or three weeks 'fooling around' with smaller though increasing doses were given and taken without relief. We were driven to the course adopted because of the complete prostration of the patient at that time.

The lady is now enjoying her usual health, not having the purgatory of an unbearable pregnancy as an abiding memory.

I have given this case as it actually occurred in practice. I make no comments on the detail other than to note that the armoury of Nature is more copious and more various than our philosophy sometime wots of; and to praise the courage and the inspiration of the patient who thus experimented her way to her effective remedy.—*The British Homœopathic Review*, March, 1910.

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## HIGH VERSUS LOW POTENCIES.

BY DR. T. D. NICHOLSON.

I have read Dr. T. Miller Neatby's cases illustrating the effects of the 200th. potency in the February Review with interest and profit. It raises the old old question of high *v.* low dilutions of drugs, and I for one think that until it is satisfactorily settled, the more it is discussed the better.

The practice of a lifetime does not suffice for any one man to "prove all things" in the way of potencies and "hold fast that which is good."

The late Dr. Drury once told me he had varied his dilutions every ten years from high to low during a long practice with out-patients at the London Homœopathic Hospital. He was without prejudice, and he thought on the whole the low were the more successful. Such a statement, however, would influence but few without knowing the character of the man as well as the character of the practice.

Of recent years I think the great majority of homœopaths have depended on the lower dilution in acute cases, and only indulged to high or very infinitesimal ones in more chronic cases which had resisted treatment whether allopathic or homœopathic.

This has been, in my opinion, a good practice to follow, though I am willing to learn a more excellent way if there is one. It may be said that—firstly, it saves trouble; secondly, it has a consensus of opinion in its favour; thirdly, it has had a wonderful amount of success.

The saving of trouble may be objected to by the purist who may describe it as laziness, but in a busy general practice, like most of our members have, it is a real thing.

Again, the stamp of authority becomes a strong motive for the iconoclast to protest against any rule or formulæ to keep even a novice within bounds, and induces him to go to extremes.

Thirdly, does the success of the axiom of low dilutions for acute cases justify us in resting content with it? Must we consider it a *chose jugée*, or rather must we not continually try and re-try it? We sadly want a good scientific reason for our faith, but in default of such at present we can only appeal to experience. I do not wish to criticize Dr. Neatby's cases. He has not over-praised his results, which he admits are not of a very convincing nature. But they may compare favourably with ordinary dispensary work and seem to be not less successful than low dilutions.

As a small contribution to the discussion which will, I presume, arise from the paper, or at any rate is being already carried on in the London Homœopathic Hospital, I will very shortly relate a few cases—mostly from memory.

## (1) VERATRUM IN DIARRHŒA.

This case occurred in my own person and I recollect the details well. I was in the country on a holiday—cycling, climbing, boating, &c., and without any known cause had an attack of diarrhœa. There was some pain in abdomen before stool which was watery and occurred two or three

states a day, but no other discomfort. I dieted myself, gave up fruit, and drank weak brandy and water, but without change. I did not take any medicine until about the tenth day when I found myself in a railway carriage with a sudden recurrence of the symptoms and with more violence. I then procured my medicine case and took one drop of *verat. alb. φ*, the symptoms suggesting that drug.

In the evening, after six hours' travelling, followed by a good dinner, I felt perfectly well, and never had another symptom.

#### (2) IRIS VERS. IN BILIOUS DIARRHŒA.

My next case is that of a young lady, a school teacher, pale and delicate-looking, but usually enjoying good health. She had eaten some meat pie at a restaurant the previous day, and this, she thought, might have been the cause of a sudden attack of illness. When I saw her she had been ill all night vomiting bile, and had frequent bilious diarrhœa, and she was doubled up with pain. She was deadly pale, had a very quick pulse, and was evidently suffering. It looked like a case of ptomaine poisoning. I at once mixed two drops *iris* in half a tumblerful of water, and ordered a teaspoonful to be taken every few minutes. After the third dose all the symptoms ceased, and the following day she was convalescent.

#### (3) BRYONIA IN LUMBAGO.

Miss H., aged 80, was attacked three days previously by acute pain in loins radiating round to abdomen. She was very rheumatic, and never quite free of pain when in health. She was unable to get into bed without the help of two servants, but once quiet on a feather-bed was quiet comfortable. The pains returned on movement the next morning and lasted all day with the slightest movement.

I ordered *bryon.*, half a drop every four hours. She quickly improved, and on the third day after was moving about with comfort.

#### (4) CUPRUM MET. IN MUSCULAR CRAMP.

Lady, aged 70, rheumatic, general health fair. Complained of being suddenly wakened every night by severe cramp in the calf. She had to get out of bed and stamp the room for several minutes before getting relief. This had occurred nearly every night for two weeks. *Cupr. met.* 3x, 2 gr. doses at bedtime, repeated for several nights, entirely removed it, and there was no recurrence after the first dose. This, of course, is a common experience.

#### (5) IPECAC. IN SICKNESS.

Woman, aged 70. Abdominal cancer. Vomiting with constant nausea, white furred tongue. The symptoms had persisted for two weeks or more. *Ipecac.* 1x, two drops every hour, controlled the vomiting at once, and the nausea gradually subsided also, although, of course, the cause could not be remedied.



## (6) HYOSCYAMUS IN MANIA.

Woman aged 80. Had several attacks of subacute mania—has illusions. Thinks she sees strangers in the room, is excited, loquacious, picks imaginary things on the bed. Pulse rapid and excited. Talks quickly and quite different from her usual quiet manner. I gave *Hyoscyamine*,  $\frac{1}{10}$  gr., every four hours, and the symptoms calmed down, and the patient was herself again in two or three days. These attacks recur at long intervals, but are readily controlled by what they call the "magic" medicine.

The above cases are not cited as in any way remarkable, but merely instances in every-day practice of homœopathic action of drugs in appreciable doses where the three desiderata, *tuto, cito, et jucunde*, are all found, and which leave no room for a high dilution to improve upon.—*The British Homœopathic Review*, March, 1910.

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THE  
CALCUTTA JOURNAL  
OF  
MEDICINE

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Vol. xxix.]

May 1910.

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[No. 5.

INFECTIOUS DISEASES.

By DR. SATISH CHANDRA BANERJEE, L.M.S.

*(Continued from page 147.)*

Now, having referred to the arrangements for the rest period we may pass on to the consideration of methods to be employed as routine work in combating the diseases as they break out.

It is essential that we should get scent of the first cases of any infectious disease. The Calcutta Municipal Act requires that any practitioner who treats or becomes cognisant of the existence of any case of cholera, small pox, Typhoid, etc., in any private or public dwelling-house, shall be bound to give information of the same to the Health Officer, but so far this has proved of very little use as we hardly get more than a dozen cards in a month from these persons. I think, notification should be made compulsory in cases of cholera, plague, small pox and diphtheria on householders; failing which, peripatetic inspectors should be appointed and an up-to-date correct register of all medical practitioners should be kept and these officers should see these men and other influential men in the ward at least once or twice a week, and inspect the burning ghats and regularly report cases to the District Health Office.

Having received information of a case, the rational course is

to isolate the patient in a suitable hospital, where the risk of the spread of the contagion can be minimised. Failing removal to hospital, home isolation should be insisted upon. The younger members of the family should be sent away at once, and if this be impracticable, they should live and sleep on the ground floor. The patient should be placed in the airiest and most secluded room in the highest part of the house. Printed rules as to how the patient is to be nursed and how his excreta, clothes and all things that come in contact with him, or his attendants are to be disinfected, are to be left with the householder. He and his medical man should be held responsible for not complying with them. If the patient is removed to hospital and disinfection properly carried out, it is only necessary to keep the household under observation for the maximum period of incubation of the disease. If the patient is kept at home the household must be kept under a certain degree of quarantine, until the last cases have ceased to be infective and the final disinfection has been completed. During the quarantine period no children should be allowed to attend school. The same exclusion should be insisted upon as regards certain occupation, *i.e.*, milk traffic, nursing, washing, sending of clothes to laundry and any business involving handling of foods. Exposure of infected clothes and articles in particular places is to be checked.

Segregation of the inmates of an infected house in special camps is sometimes adopted as a preventive measure to ensure early detection of any case occurring amongst them, but so long as the people will remain opposed, no good will result from its enforcement.

### **Now about quarantine.**

By quarantine I mean the inspection, detention and disinfection of the travellers and their baggage. It may be either outward or inward. Its obvious disadvantages are that it imposes restriction on trade and inconvenience on the individual. Further, as it is impossible to enforce it rigidly, quarantine is now giving place to a system of observation. Here persons suffering from an infective disease may indeed be detained but the rest

are allowed to proceed to their destination, after giving their names and addresses, etc., to the Medical Officer, to be forwarded to the Sanitary Authorities of the District they are going to, who in turn keeps these men under observation and control, till he thinks the risk is over. Importation of rags, etc., from infected areas should be prohibited.

**Now we shall pass on to the question of disinfection.**

All disease-poisons may be divided into those which are generated and multiplied within the human body and those which arise solely without the body. To the former the term contagion is applied and to the latter miasm. Of the nature of miasm we have no definite knowledge but it is probable that in many there are organic entities. Now disinfection means the killing of the various micro-organisms, which are the cause of infective diseases. No process can be considered efficient unless it is a real germicide and not an agent which will merely prohibit temporarily the growth of the germs.

An antiseptic is a substance which has the power of preventing putrefaction; while a germicide kills disease germs on spores. Disinfectants should be also distinguished from deodorants, which simply act by disguising or removing the smells.

Now there are three principal agencies by which disinfection can be done.

(1) Heat. (2) Chemicals. (3) Fumigation.

**Re disinfection by heat.**

The most complete, thorough, but the most destructive of all disinfecting agents is fire. Heat of less intensity may be used either in moist or dry form.

At first, dry heat when it could be applied properly, was thought to be the best disinfectant; and until some 15 or 20 years ago, disinfection by steam was rarely done. The apparatus in use, was the hot air disinfection, heat being supplied by a series of atmospheric gas burners. Now, however, in modern disinfecting stations, disinfection is carried on by steam. Hot air has been abandoned because it requires a very high temp., above 220°F., which in itself is damaging to the fabrics of



most articles. Then, air being a bad conductor of heat, more time was spent and the work was not thorough as the hot air had not the penetrating power of the steam. Now-a-days saturated steam is being used. Saturated steam is steam at such a temperature and pressure, that the least cooling will cause it to be condensed and liberate its latent heat, which will penetrate through any thickness of bedding or clothing.

(2) Disinfection by chemical solution appears to be a simple matter, provided the materials used are in suitable strength. 5 per cent. Carbolic acid sol., or 1 in 1,000 Sol. of  $\text{Hgcl}_2$  are efficient disinfectants.

(3) Fumigation is done by the production of sulphurous acid and chlorine. In all probability sulphur fumes, have no effect unless the atmosphere is first moistened by a steam spray. 11b of S., is to be burnt for 1,000 cubic feet. Gaseous disinfectants are not to be relied upon, as they do little more than disinfect the air, which in the ordinary course of things is changed 3 or 4 times an hour. Besides,

- (1) They do not kill spores.
- (2) Microbes under a film of dust escape.
- (3) It is difficult to make a room air tight.

#### **Disinfection of discharges from the sick.**

The discharges should be soaked up with rags, which should be burnt. Discharge from the bowels, vomit, or urine or expectoration should be received in vessels charged with disinfectants. For this purpose 4 or 5 oz. of carbolic acid powder, 6 to 8 oz. sol. of carbolic acid—strength 4 oz. to a gallon, 6 to 8 oz. sol.  $\text{FESo}_4$ —strength 11b to a gallon, should be used, and the disinfected mass should be buried 3 ft. deep or thrown into sewer.

For the destruction of disease germs in urine, facial discharges, sputum, etc., a saturated solution of bleaching powder is efficient. For the purification of cesspools, sewers, or masses of infected filth chlorinated lime stands at the head of disinfectants.

The best way to disinfect the walls of a room after the patient is removed is the production of the disinfectant solution in

the form of spray and for this purpose an equifex spray may be used.

Now the question is, is it possible to destroy the germs in air? Experience having shown that all substances actually poisonous to contagion are still more poisonous to germinal matter of human being, it may be laid down as a general proposition that it is impossible to destroy the contagion germs in the confined air of a room while men and women remain in the apartment. Then when it comes to the general atmosphere, the question to attempt to disinfect it, for example, to try to destroy a widespread poison as for example exists in a small pox epidemic needs no discussion to show its futility.

It is well known that contagion diluted beyond a certain point is powerless, so free ventilation is the only means at our command of disinfecting rooms in which there are human beings. The opportunity to destroy disease germs is not after they have dispersed in the air, but while they are still in contact with the various solids and liquids passed from the body or brought into contact with it in the way stated above.

Although miasm cannot be readily destroyed when once generated, yet in many instances we have the power to prevent their formation. In doing this, the best remedies are cleanliness, air, water and sunlight and the skilful use of chemical substances, but the most skilful use of chemicals alone cannot take the place of ventilation and cleanliness and it is to cleanliness, ventilation, drainage and to the use of perfectly pure drinking water that we should look for safety against nuisance and infection and artificial disinfection cannot properly supply the place of these essentials. The subject of disinfection has been already dealt by Doctor Roy and we are greatly indebted to him for the able demonstration he gave us the other day. I am sorry I have no time to enter into details of chemical disinfection to-day.

Now comes inoculation, the last of the four great measures for preventing the spread of the disease. Three forms of preventive inoculation have been employed to secure immunity

from disease, or to arrest the development of contagia that have already reached the tissues.

(1) Inoculation with the attenuated virus of the original disease.

(2) Inoculation with the chemical products of the organism of the original disease.

(3) Inoculation with serum obtained from an animal that has been treated by one of the two preceding methods.

The preventive value of inoculation in small pox was known to the ancients. They opened the superficial veins and introduced dried small pox scales of the previous year.

Pasteur was the first to place preventive inoculation on a scientific basis and Haffekine and others followed him up and have established beyond doubt the harmlessness and efficiency of inoculation as a preventive measure in case of plague, cholera, typhoid, etc.

I am sorry I have no time to enter into a detailed account of inoculation. However, preventive inoculation is the measure of the future. It is the last line of defence and holds a place of its own and if sanitary resources are coupled with it, I think an epidemic may be checked in time.

But it should be noted here, that people do not like it and still look upon this method with suspicion.

I have some experience. I was for some time employed on Anti-plague inoculation duty in the Districts of Ludhiana and Hoshiarpur in the Punjab. My party used to go from village to village, inoculating those who volunteered. While there I heard all sorts of absurd rumours. The village folk believed this as a cunning device for taking one million lives, which they said are to be sacrificed, to propitiate Gods, to avert some untold disaster to the Royal family and to the empire. In vain they would listen to arguments; and when European and Indian officers and others holding position in society offered themselves for inoculation to set an example to these common people, some of them said there were two kinds of serum, of which the harmless ones have been used just now and the poisonous re-

served for the common people and one day while inoculating, in a village the leaders came and said they would agree if only their own serum would be used. By their own serum they meant that they should go into the stores, and pick out phials themselves. After some hesitation I agreed and their men were inoculated with the serum of the phials they brought; no bad effects followed and 15 days later, when I returned to the village many came and offered for inoculation.

I do not understand why so much secret suspicion exists in the minds of the masses and surely so long this attitude remains inoculation as a preventive measure is doomed to failure, in spite of all its merits. Our first duty is to educate the masses, to mix with them and to earn their confidence.

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## TUBERCULOSIS.

BY DR. SATISH CHANDRA BANERJE, L.M.S.

Few diseases possess such an interest for humanity as Tuberculosis, both on account of its wide-spread prevalence, and its destructive effects particularly among the young. Over two millions of people die from it every year throughout the world. In our country Tuberculous disease in some forms produces a death-rate far in excess of such scourges as cholera, small-pox and dysentery, being exceeded only by pneumonia and malaria and in epidemic time by plague. In the Bombay Presidency alone there were 60,615 deaths due to consumption and allied diseases, during the year 1906-1907. In the Central Provinces the figures have doubled during the last few years, those for 1906-1907 being 16,609. In Madras the ravages seem to be more frightful. In 1902 the figures stood at 5,042, in 1906 they rose to 23,378. Five years ago, 548 persons died in Eastern Bengal and Assam; during 1906-1907 the number was quadrupled. In Lower Bengal the figures have risen from 5,666 to 12,825. In the United Provinces diseases of lungs carried off over 2,000. Victims in 1906 in the Punjab were over 57,000 and in the Frontier Provinces 1,383.

The following figures taken from jail reports are instructive as shewing the prevalence of the disease.

Percentage of deaths to general mortality.

	PHTHIS IS ALONE	ALL LUNG DISEASES.
N. W. P. Jails ...	10.25	31.66
Bengal Jails ...	12.82	28.22
Burma Jails ...	19.06	31.16
Andamans and the Penal Settlement ...	17.2	27.6
All Indian Jails ...	11.64	28.66

On analysing the Medical College Post Mortem reports for the last 25 years, Major Rogers found that Tuberculosis was noted in no less than 25% of the bodies examined and this doubtless is an under-estimate as the condition of the lymphatic glands was seldom recorded and there is evidence of its daily increasing amongst us and in a few years it is likely to rank as one of the chief diseases along with malaria and cholera.

In Calcutta, Tuberculosis in some form is one of the most common and fatal diseases and it is reported that the death-rate in this city is over 2,000 per annum and many cases have passed unrecognised and in others Tuberculosis is a contributory cause of death.

The conditions of life in Calcutta are most favourable to the spread of the disease, for, the climate is warm and moist, the site of the town is low-lying alluvial with a high subsoil water, while the poor people, many of whom hardly get sufficient nourishing food a day, sleep on the ground in overcrowded ill-ventilated huts and in cold weather with no more covering than a thin cloth on a "chatai". The disease is however by no means confined to the poor classes, for we all know that there is hardly a well-to-do family that has not got its case or cases.

NATURE OF THE DISEASE.

Tuberculosis is an infective disease in which the tissue changes are due to the action of a specific virus or infective agent, there is always a local or primary lesion and the local lesion continues to extend. Now we know that the bacillus of tubercle is the

essential agent of infection. They are rod like bodies, usually straight, sometimes curved rounded at their ends, each measuring in length about  $\frac{3}{4}$  of the diameter of red blood corpuscles and contain small round bodies or spores. They are so minute that 400,000,000 placed side by side would be required to cover one square inch; placed end to end it would take 7000 to make a line an inch long. They grow slowly and at a temperature approaching to that of a living body, above  $30^{\circ}$  and below  $40^{\circ}\text{C}$ . But the bacilli and their spores are very resistant and retain vitality under adverse circumstances. But they may be killed by exposure for 15 minutes to a moist heat  $212^{\circ}\text{F}$ . or plunging them in boiling water for 10 minutes. Direct sun-light is inimical to their culture and diffuse day-light kills them in several days.

The bacilli and their spores survive when dried and they are then suspended in air and carried as dust, ready to be inhaled during inspiration.

The Tubercle bacillus has two actions—one local and the other general. The former inaugurates changes in the tissues on organs directly affected, the latter produces a condition of toxæmia by the absorption of the products of the activity of the bacillus giving rise to constitutional disturbance, pyrexia, wasting anemia, and night sweats with languor, debility and incapacity for prolonged exertion. The local action of the Tubercle Bacillus causes certain changes in the cells in the immediate neighbourhood of the bacilli, resulting in the formation of Tubercles.

#### TUBERCLE IS MET WITH UNDER TWO FORMS.

(1) Grey miliary nodules. These are globular in shape, and vary in size from a pin's point to a mustard seed and have the lustre and hardness of the cartilage.

(2) Yellow caseous masses. Yellow tubercle is believed to be the degeneration of the miliary and frequently the two forms are mixed and the various stages from grey to yellow can be traced. Microscopically, a typical grey granulation when of some size is seen to consist of smaller nodules while each of these nodules

again is composed of cells of various shapes and sizes arranged in three Zones.

The inner Zone is formed by one or more large, branching, so called giant-cells composed of granular protoplasm in which many oval nuclei containing nucleoli are found.

The next Zone consists of large single cells arranged between the processes and branches of the giant-cells which ramify through this Zone. These are epitheloid cells. Ordinary leucocytes form the constituents of the third Zone. They belong chiefly to the multinuclear variety of the leucocytes.

There is no distinct line of demarcation between the outer Zone of lymphoid cells and surrounding tissues. The tubercular nodule though often seated on a small vessel is itself non-vascular and the bacilli may be found in the giant-cells and in and amongst the epitheloid cells.

Tubercles, probably on account of the absence of blood vessels and the pressure of the leucocytes and possibly on account of the noxious influence of the bacilli, are very liable to undergo caseous degeneration. The change begins in the centre of the tubercle in the giant-cells and spread outwards. Softening is the usual result of caseation. The caseous matter although it may remain for a time unaltered ultimately liquefies and breaks down. The result is the formation of a cavity or ulcer. After caseation has occurred the tubercle may become encysted or may undergo calcification in both of which state it remains harmless. Fibrous transformation is a much more unusual change in tubercles and occurs only when the process is very chronic and bacilli few. Fibrosis is protective and conservative while caseation is destructive and progressive.

Now, the tubercular process may remain confined to the seat of inoculation, with or without any local manifestation and the bacilli may spread by the lymphatics to the nearest lymphatic gland and there become arrested; or the bacilli may pass the glands and enter the lymphatic or hæmic circulation and either may become lodged in some organ or some distant part of the body as testicle, bone, &c., or become disseminated, setting up

general acute tuberculosis. The brunt of the affection falls, on the latter case, either on the lungs or on the membranes of the brain.

The causes, influential in producing tuberculosis and influencing infection are numerous and varied but may for general consideration be enumerated under two groups, viz., those which are predisposing, and operate through the constitution as a whole and those which are exciting and act immediately upon the organs implicated; these two sets of causes may be more or less distinctly associated in an individual case. The following may serve to illustrate some of the conditions of the predisposing kind. A constitutional tendency to scrofula and its manifestations lends itself readily to the production of phthisis.

The mention of this constitutional state naturally suggests another powerful predisposing case, viz., Hereditary Transmission.

The extent to which this influence operates has been differently estimated, but it is impossible to deny that children, whose parents, one or both of whom are consumptive, inherit a constitution favouring its development under a suitable exciting cause, but a similar constitutional proclivity may be induced by other influences acting through the parents. Should either or both of them be enfeebled by previous disease or any other weakening cause they may beget children possessing a strong predisposition to consumption.

The possible methods of transmission of the germ in direct inheritance are three.

#### A. Transmission by sperm.

There is no clinical evidence to support this view and the spermatozoon is known to be a nuclear material incapable of being attacked by tubercular bacilli.

#### B. Transmission by ovum.

Tubercle bacilli have been detected in the ovum of a female rabbit artificially fecundated with tubercular semen. The possibility of transmission by the ovum may be accepted parti-



cularly in lower animals, though it is very difficult to get correct data to start with human beings.

### C. Transmission through the blood by means of the placenta.

Certain authors hold that in these cases placenta is the seat of the disease and tubercles have been demonstrated in some cases; but instances are not rare in which with an apparently healthy placenta, both the placental blood and the fetal organs contain Tubercle Bacilli. Jobne has recorded of a case of congenital tuberculosis of the calf whose mother was affected with severe tuberculosis of the lungs. In the calf the tuberculosis was in the liver, portal glands, bronchial glands, the infection having been by the umbilical vessels and the placenta. While inheritance plays a very important part in the predisposition to tuberculosis, it has not yet been proved that in man it is ever communicated from parent to offspring. This is consistent with the fact that bacilli do not readily pass through membranes. In short what happens is this; the children of tuberculous parents are less resistant to the disease than are the children of healthy parents.

### Conditions influencing infection.

#### Soil and climate.

That phthisis is to be met in all climates and is seen as frequently in tropical as in temperate regions is evidence that climate alone exercises little influence. It may be stated as generally true that phthisis is less prevalent the higher we ascend and elevated region with dryness of the soil are hostile to its prevalence, while low-lying damp districts seem to favour its development. We may summarize the physical agencies which are at work in higher elevated regions as follows.

1. Extreme purity of air and freedom from floating particles especially of organic germs.

Dryness of air and soil and consequent freedom in winter from mist and fog. Low barometric pressure and corresponding rarefaction of air and low temperature of air causing increased tone of cardiac muscles and increased ventilation of lungs.

Great intensity of light during hours of sunshine and the presence of an increased amount of ozone.

### **Surroundings.**

Dwellers in cities are much more prone than the residents of the country.

In imperfectly ventilated ill-drained dwellings, workshops and in residence in close dark alleys and in tenement houses the liability to infection is increased.

Occupations, habits and conditions of life have a very important bearing on the development of the disease. Those occupations which necessitate the inhalation of irritating particles as in the case of stone masons, needle grinders, workers in mineral and cotton are especially hurtful chiefly from the mechanical effects of the irritating particles in the air inhaled.

No less prejudicial are occupations which are carried in a heated and close atmosphere as is often the case with compositors and gold beaters. Again habitual exposure to wet and cold or to sudden changes of temperature will act in a similar way in inducing pulmonary irritation which may lead to phthisis.

Irregular and intemperate habits are known predisposing causes, while overwork, over-anxiety, constant worry, want of exercise, insufficient or unwholesome food, bad hygienic surroundings such as overcrowding or defective ventilation are all powerful agents in sowing the seeds of the disease. Consumption sometimes arises after fever and certain infectious maladies, such as, measles, whooping cough, influenza, pneumonia or in connection with any long continued drain upon the system as in over-lactation, diabetes or syphilis; the influence of catarrh and so-called neglected cold is too well known.

Now re age and sex.

No age is exempt, but pulmonary tuberculosis occurs most frequently from the 18th to 35th year. From the 5th to 10th year individuals are less prone. During the 1st decade, bones, meninges and lymph glands are most frequently attacked.

The influence of sex is not marked. Women are most frequently attacked possibly from the fact that they live indoors and their power of resistance is lowered by more than one cause.

Marriages of near relatives are held by some to induce a consumptive tendency owing to the fact that any constitutional taint likely to exist is intensified in this way.

Here the question of marriages for those who have had tuberculosis or who has a family history of tuberculosis is to be mentioned. Subjects with healed lymphatic or bone tuberculosis marry with personal impunity and beget healthy children. The question of marriage of a person who has got arrested or a cured lung tuberculosis is difficult to decide; in a male the personal risk is not great and when the health and strength are good and circumstances and external environments favourable, family history not bad, much restriction should not be put, but in women the question is complicated with child bearing. With a localised lesion, absence of hereditary taint, good physique, education and favourable environments, marriage might be permitted but we should remember what DuBois said "If a woman threatened with phthisis marries, she may bear the first accouchment well, the second with difficulty and the third never.

Now we shall pass on to the direct exciting causes.

The immediate exciting cause of tubercle is the presence of the Tubercle Bacillus. The bacillus is believed in man to gain admission,

(1) By the respiratory tract as by the inhalation of the dust of dried phthisical sputa.

(2) By the digestive tract as in (a) the saliva of the phthisical mother or nurse, (b) in milk taken from cows with tuberculous udders or (c) in imperfectly cooked tuberculous meat.

(3) By Inoculation; by skin.

Inoculation by inhalation.

The dust of a room or other locality frequented by patients with pulmonary tuberculosis is infective. The bacilli are attached to the fine particles of dust and in this way gain en-

trance into the system. Cornet remarks that the consumptive in himself is harmless and only becomes harmful through bad habits. It has been shown that the expired air of the consumptive is not harmful, the virus is only contained in the sputum, which when dry is widely disseminated in the form of dust and constitutes the great medium for the transmission of the disease. It attains its maximum intensity where the filthy habit of spitting on the floor prevails and especially if the room is matted or carpeted. In the last stages of consumption when the patient becomes weak the sputum is expelled imperfectly, and pillows, sheet, handkerchief are soiled, and in males the beards and moustaches are smeared. Special danger exists where the contact is very intimate as between man and wife or where the residents are confined and restricted in the matter of fresh air and a free open life, conditions which on one hand would favour the presence of the bacilli in the atmosphere and on the other hand would lower the vital resistance of the individual.

#### **Infection by milk and meat.**

The milk of an animal suffering from tuberculosis may contain virus and is capable of communicating the disease. It was formerly thought that the cows must present tuberculous disease of the udder but recent instances have shewn that the milk may be infected in a large number of cases in which tubercular mammites does not exist. Even butter and *chhana* made from the milk of tuberculous cows have become infective. The frequency of intestinal lesions in children no doubt finds explanation here. In 127 cases of fatal tuberculosis in children Woodhead found that the mesenteric glands were involved in 100.

#### **Infection by meat.**

An important etiological fact in connection with tuberculosis is the wide-spread occurrence of the disease in animals and cattle from which a large proportion of the meat used for food is derived. The structures most frequently attacked are the serous membranes pleura, peritoneum and especially the lungs but the disease often extends to lymphatic glands, alimentary canal, liver, spleen and nervous system.

The meat of the tuberculous animal is not necessarily infective and this mode of infection probably plays a minor role as usually the flesh is thoroughly cooked before eating.

Now considering the close relationship between the cattle and the food of man, both in regard to milk and butcher's meat, we shall just briefly mention some aspects of tuberculosis in animals.

We know that all warm blooded animals are susceptible. It is a common disease of cows in town dairies. In these, the lesions observed are much similar to lesions in man, consisting of tubercle formed of giant cells, epitheloid cells, and a varying proportion of leucocytes and bacilli presenting the character of tubercular bacilli have been formed in the affected structures. They are attached to the surfaces of the serous membranes of the thorax and abdomen or else supported in villous projections. In internal organs we have large rounded nodules.

The differences between this form of tubercle and those ordinarily found in man are that it is a more vascular structure more like a tumour with a power of growth from the surface and sometimes attaining a great size and often suspended from the serous membranes by a vascular stalk or pedicle and in the interior of organs such as lungs, &c., surrounded by a translucent capsule of vascular tissue or excavated into a smooth walled cavity.

Until 1901 it was generally thought that tuberculosis in animal and man was the same disease. In that year Koch created a sensation at the Berlin congress stating that in his opinion human tuberculosis differ from bovine tuberculosis and cannot be transmitted to cattle. Further, he maintained that bovine tuberculosis is scarcely, if at all, transmittable to man. His opinion was arrived at the results of the following experiments.

Six bovines were fed for 7 months with food mixed with sputum containing tubercular bacilli of human origin, none of them contracted the disease.

The same result was obtained with four animals which were caused to inhale the bacilli in the form of spray, and thirdly injection of the human bacilli into the peritoneal cavity sub-

cutaneous tissue of the bovines, was no more successful and the experimented animals did not contract the disease. The same experiments were tried in swine, sheep and goats and they also were not affected. On the other hand in all cases where bacilli of the bovine origin were substituted and other conditions remained the same; the animals contracted the disease. Koch then pointed out that detailed experiments with human beings to determine their relative susceptibility were obviously impossible and he asserted that infection of human beings through this channel is very uncommon and emphasized by saying that primary tuberculosis of intestine is very rare in children whereas it ought to be one of the commonest of the diseases if the danger of infection through milk was real owing to the large quantity of milk consumed by children.

These opinions were however contested at the Congress and they were contrary to the findings of the two Royal Commissions held to decide the question. Other eminent authorities held that primary tuberculosis is comparatively common in man and cited instances in favour of infection through tuberculous milk and meat. Crookshank combated the idea that human tuberculosis cannot be transmitted to bovines by describing successful inoculations by himself and Dr. Martin and the finding of the Royal Commission was antagonistic to Koch's opinion, he having been misled in the opinion of the Commission by using only one strain of bacillus and that not of a very virulent kind.

The leading features of the results of the German Commission were as follows :—

Among the tubercle bacilli of animals distinction must be drawn between a *typus humanum* and *typus bovinum*.

From tuberculosis of the cattle only the bacilli of the *typus bovinum* were cultivated. With bacilli of the *typus humanum* they did not succeed in producing progressive tuberculosis in cattle.

In man bacilli of the *Typus humanum* are mainly found. It is therefore to be inferred that man receives his tuberculosis directly or indirectly by transmission of tubercular bacilli from one person to another but then as bacillus of *typus bovinum* have been found in man especially in children under 8 years of age it

must be concluded that man may be infected with tuberculous milk or meat. The British Commission sums up its results in a somewhat positive proposition. To quote these words. "There can be no doubt that a certain number of tuberculosis in man especially in children are due to infection by bacilli from bovine tuberculosis".

The results of the discussion at the Congress in Paris as regards the relation between bovine and human tuberculosis is summarised thus.

The cattle tuberculosis is no doubt a disease which is transmissible to man and vice versa. The tubercular bacilli of the human tuberculosis, as well as of the bacilli of the tuberculosis in cattle and other species, must more particularly be regarded as varieties of the same species. Professor Hamilton says, "it is undoubtedly proved, that bacilli from man can cause tuberculosis in cattle and also that they increase their virulence on successive passages till they at least have almost the same virulence as the cattle bacilli; and with such proofs in view we can safely conclude, there is but a difference in degrees between the two types and finally it has been seen that the difference between the two varieties of the bacilli is so small that when they have passed through guinea pigs it is impossible to distinguish one from another. Now to sum up, the following propositions may be taken as enunciating our knowledge on the subject:—

- (1) Human and cattle tuberculosis are different varieties of one and the same disease.
- (2) The human body is liable to both varieties.
- (3) Cattle tuberculosis is often transferred to man, both through articles of food and by contagion.
- (4) The varieties may or may not co-exist in man.
- (5) A mild attack of bovine tuberculosis produces immunity from pulmonary tuberculosis.

I am sorry I have no time to mention even summarily the pathological conditions of the different organs or tissues affected and their clinical symptoms but as pulmonary consumption is more frequent and as success of our preventive measures depends on the early diagnosis of the disease than any other, it is essen-

tial that this should be referred to briefly before and pass on to the question of prophylaxis.

To recapitulate. Pulmonary consumption may be regarded as an infective disease originating in the introduction into the lungs of a specific infective organism from without, the development and spread of which depend upon its encountering a suitable soil or an inherited predisposition for its culture and growth.

### **Now re. Modes, Onset and History of the cases.**

The cases in an outer department naturally fall into three classes.

First, those obviously suffering from tuberculosis in whom the diagnosis is easy. The cough, shortness of breath and expectoration point to the respiratory organs as the seat of the disease. The loss of strength and flesh to some chronic and the hepatic symptoms to some inflammatory disease. The physical signs which indicate consolidation of lungs with breaking down and contraction commencing at the apex and gradually spreading downwards render it highly probable that the disease is tuberculous in nature and while the discovery of the bacilli makes it certain.

Secondly, those which can be at once classed as nontuberculous.

Thirdly, there comes a number of patients in whom the diagnosis is not so easy and straight. There may be suspicious constitutional symptoms without definite and characteristic physical signs. This group includes cases of the early stages of phthisis as also those of later stages in whom the disease has been arrested and is at the time quiescent.

Now, if we go carefully into the history of the cases and of the patients and their family history, much valuable information pointing to the nature of the disease is obtained and the following different facts are generally ascertained:—

(1) The disease was latent for a long time and made considerable progress and even led to excavation of the apex before any serious symptoms were manifest or the symptoms were marked by the existence of serious disease in other organs.

(2) The early manifestations were great irritability of the stomach with vomiting, or a type of acid dyspepsia, eructations and with apathous ulcers in the mouth and throat. The



patient becomes anæmic, complains of palpitation of heart, slight afternoon fever and increasing weakness.

Thirdly, in a considerable number of cases the patient had repeated paroxysms of chill, fevers and sweats and had symptoms which suggested malarial fever.

Fourthly, the first symptom was of a dry pleurisy over an apex with persistent friction murmur or in other instances the pulmonary symptoms have followed an attack of pleurisy with effusion. The exudate disappeared, cough persisted and the patient became feverish.

Fifthly, the patient complained of repeated attacks of sore throat and pain in swallowing. The voice became husky and he began to complain of cough, progressive weakness, afternoon fever and loss of flesh.

Sixthly, some would give history that the lymphatic glands of the neck and axilla were enlarged for some time and the patient's health began to fail before any lung symptoms were noticed. Frequently the first symptom of the disease was a brief hæmorrhage from the lungs following which the pulmonary symptoms developed with great rapidity. In other cases hæmoptysis recurred and months passed before the symptoms became well established, and lastly in by far the largest number of cases the onset was with bronchitis or as the patient expresses it a neglected cold.

The patient was very susceptible to cold and was subject to Naso-Pharyngeal Catarrh, then following some unusual exposure a bronchial cough developed which persisted and was very frequent and irritating.

Another form of onset noted is influenzal. The patient might have suffered from an attack of influenza which so debilitated him that he became infected with tuberculosis or influenza might have lit a quiescent lesion.

I only mention these details for if these are always kept before our mind our attempts to early diagnosis will be less irksome and more fruitful.

*(To be continued.)*

## EDITOR'S NOTES.

**Rudolf Virchow House.**

German physicians and pathologists in particular are busily engaged in raising a sum of money sufficiently large to enable them to erect a suitable memorial to Virchow, the eminent pathologist. They have already purchased a piece of ground in Louisenstrasse and await only the completion of the fund to erect the building. The plan is to have this serve as a meeting place for various societies in the capital. German physicians throughout the world, and particularly those of America, are requested to interest themselves both by personal donations and by solicitation from wealthy patients.—The *New England Medical Gazette*, April, 1910.\*

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**Polonium.**

We find the following interesting piece of news in the *Times*: "According to a communication made on February 14 to the Academy of Sciences by M. Lippmann, Mme. Pierre Curie, the widow of M. Pierre Curie, the discoverer of polonium and radium has at last succeeded in isolating  $\frac{1}{10}$  mg. of polonium. In order to obtain this result Mme. Curie, working in co-operation with M. Debierne, has had to treat several tons of pitchblende with hot hydrochloric acid. The radio-active properties of polonium turn out to be far greater than those of radium. It decomposes chemically organic bodies with extraordinary rapidity. When it is placed in a vase made of quartz, which is one of the most refractory of substances, it cracks the vessel in a very short time. But a no less distinctive quality of polonium is the comparatively rapid rate at which it disappears. Whereas it takes 1,000 years for radium to disappear completely, a particle of polonium loses 50 per cent. of its weight in 140 days.

The products of its disintegration are helium and another body, the nature of which has not yet been ascertained, but Mme. Curie and M. Debierne are inclined to believe it to be lead. Its identity, however, will shortly be established, and at the same time science will have had the experimental proof of the transformation of a body which had been believed to be elementary.—The *British Homœopathic Review*, March, 1910.

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### Some Drawbacks of Pasteurisation.

In view of recent investigations conducted by Czerny in Germany by Pannington in Philadelphia, and by Dr. Deutsch of Budapest, it is likely that current views on the value of pasteurisation will have to be altered. The medical profession has for many years been recommending the use of pasteurised milk for the poor of our large towns, and the daily newspapers, following this lead, have had much to say in its praise. It must be admitted that pasteurisation does not in any way alter the nutritive qualities of milk, whatever effect it may have on it from an æsthetic point of view. Moreover, there is no doubt that by pasteurisation the bacterial contents of the milk are for the time greatly diminished, and the danger of infection is proportionately lessened. Unfortunately, however, according to Dr. Deutsch, the diminution of bacteria is only temporary, and pasteurised milk, when examined a day or two after preparation, is found to contain a larger number of bacteria than ordinary milk. The organism chiefly affected by pasteurisation is the lactic acid bacillus, whose therapeutic effects are now so much in evidence.—*The Lancet*, February 26, 1910.

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### A dangerous dry Shampoo.

Another example of silly and dangerous lay advice is given in a letter which we publish this week from Dr. V. H. Veley. Gasolene is recommended for giving the hair a dry shampoo. As Dr. Veley points out, gasolene cannot be purchased by the public. Its use for any general purpose has been strictly prohibited owing to its giving off an inflammable vapour even below ordinary room temperature, say 15° C., or 60° F. But clearly some other petrol is meant which would be sure to be equally dangerous for all practical purposes as, unless it were rapidly volatile, it would not answer as a satisfactory dry shampoo at all. It is true that a note of warning is given, for it is recommended in our contemporary that the shampooing operation be done in daylight, and further, that the ears should be stopped with cotton wool during the process, as some people are apt to find that the vapours affect their hearing; but such directions, even if they are heeded, convey to the public very little idea of the extreme risk involved by the use of such a highly and easily inflammable fluid. Pretty girls, to whom this sinful advice is particularly addressed, would be well advised to eschew the use of highly inflammable materials for the cleansing of the

hair. As we have pointed out before, it is difficult to understand why the public, pretty or otherwise, does not give such a perfectly safe and effective mixture as distilled water, spirit, and ammonia a trial.—The *Lancet*, April 30, 1910.

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### The Cold storage of Meat.

In both Canada and the United States the price of food of every description has generally risen within the past few years and is still rising. This is said to be largely due to the abuse of the cold storage system, the charge being brought against many of the large meat packing firms of the United States that food is held in cold storage frequently for the sole purpose of keeping up the price by controlling the market. The Bill, which has been introduced into the legislature of Massachusetts to regulate the cold storage warehouses in that State, provides that on being placed in, or taken out of, cold storage all food products shall be stamped or otherwise marked with the date upon which such action is taken and that not longer than three months shall intervene at any time between these dates. There is, however, another aspect of the cold storage question which has not been sufficiently considered—namely, the fact that meat which has been retained in cold storage for a considerable period may undergo deterioration and become unwholesome. In Canada it is felt that food products should not be retained in cold storage for several months, as is stated to happen frequently here as well as in the United States. An investigation of the changes which take place in meat kept in cold storage for varying periods would be instructive, and a movement is on foot to this end.—The *Lancet*, April 30, 1910. •

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### Alcohol and Alpinism.

Abstinence from, or a most moderate use of, alcoholic liquors has within the last 20 years become a marked feature of nearly all classes of society, and in none more markedly than in that composed of persons devoted to hard muscular exercise. Dr. L. Schnyder of Berne recently published in vol. vi. of the *Archives de Psychologie* the results of an inquiry set on foot by him amongst mountaineers as to their use of alcohol. This report has now appeared in an authorised English translation by E. G. Richards, and it is a document of much interest. In 1903 Dr. Schnyder addressed a series of questions to about 1200 members of Alpine clubs, both

Swiss and foreign, and received 573 answers. Of the members answering the question as to the use of alcohol in daily life, 573 in all, 446 habitually took alcohol in some form and 54 were total abstainers. Between these two lots came 73 who only took alcoholic beverages very occasionally. When mountaineering 412 carried alcohol and 161 carried none. Nearly all those who carried alcohol added that it should only be used at the latest possible moment, and then only very moderately. Dr. Schnyder's sixth question was, "Summarise your general impressions as to the rôle of alcohol in mountain climbing. Do you prefer another substance to it?" To this question he received 578 answers, of which 254 were distinctly unfavourable, 224 rather favourable, than unfavourable, and 100 distinctly favourable. Almost all the trained mountaineers are unfavourable to the use of alcohol in any form or at any time on the mountain, one notable exception being Mr. W. B. Coolidge. But even he only says that a small quantity of wine is a better restorative than tea or coffee and that cognac is indispensable as a reserve in case of exhaustion. Mr. Coolidge is an accomplished mountaineer and not a medical man, but his experience agrees closely with that given by Mr. Clinton T. Dent, who rarely takes alcohol with him, but says that the chief value of alcohol lies in its stimulating power to the appetite. "Let the man who can eat without alcohol not use it! But in the case of one who has no desire for food alcohol can stimulate that desire; and, what is more important, improve the power of assimilation at the same time." This action of alcohol was noticed in particular, we remember, during the Ashanti war of 1874. It was then found that alcohol on the march, though it gave rise to temporary stimulation, yet produced greater fatigue after the stimulation had passed off. On reaching camp at night the older men found that a small ration of rum increased their appetite and made it possible for them to enjoy their food. Beef tea was found to be a better stimulant for marching than alcohol, while it was not followed by secondary depression. Dr. Schnyder comes to the conclusion that alcohol is harmful during the climb, that it may be used to enable the climber to overcome *the last* obstacle as a final stimulus, and that it is useful as an aid to appetite and digestion. He suggests as a substitute for alcohol some substance containing caffeine, and has devised the following powder: kola and cocoa of each 5 grammes; sugar 10 grammes; to be taken in a little water.—*The Lancet*, April 23, 1910.

### Intrahuman Bone-Grafting.

MACEWEN (*Annals of Surgery*, December, 1909) reports a case in which the greater part of the shaft of the humerus was restored by intrahuman transplantation. This operation was performed thirty years ago on a patient aged three years. The boy who was then thus treated is now a man in regular employment. During the greater part of the interval of thirty years the man has depended upon his physical exertions for the earning of his livelihood. He worked as a joiner for many years, and now is an engineer's pattern maker. The grafted arm has increased in length, but not in proportion to the increase of the sound one, which is 3 in. longer than the other. The greater portion of the increase in length of the grafted humerus has come from the proximal diaphysis; but still not the whole, as there has been an interstitial growth between the fragment of the transplant. In addition to this case, the author mentions three others—one illustrating human reimplantation of the flat bones of the skull, and two of restoration by transplantation of human jaw bones. In both of these latter cases the operation was performed for the removal of marked deformity, as well as for the restoration of the function of the mandible. Reference is also made to a further case, reported by Cameron of Toronto, who has lately seen and examined a man on whom Sir William Macewen had twenty years previously transplanted about 5 in. of the tibia. The limb is now a thoroughly sound and reliable member, which enables the patient to engage in hard labouring work. It is pointed out that the periosteum plays no part in the reproduction of bone after transplantation, and in the majority of cases observed by the author was not transplanted along with the bone.—*The British Medical Journal*, February 26, 1910.

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### Jubilee of Professor Politzer.—Proposed Legislation against Quackery.

The well-known aural surgeon, Professor Adam Politzer, recently celebrated the fiftieth anniversary of his graduation, and the esteem he commands amongst his brethren was well shown by the manner in which this occasion was made use of to do him honour. The senate of the university presented him with a renewed diploma of M. D., following an old custom which is in use here. The Austrian

Otological Society, of which Politzer is the only honorary member, celebrated the anniversary by offering its formal congratulations to the professor in his own house. Professor Urbantschitsch, President of the Society, delivered an address. A golden wreath was presented by the Otological department of the policlinic, and numerous surgeons from all parts of the world were present at the ceremony, amongst them Mr. Cheatic, representing the British Otological Section of the Royal Society of Medicine. Politzer presented his very valuable library, containing some 4,000 volumes, among them being several unique books, to the library of the university. A part of the collection consists of old manuscripts which he had procured with greatest difficulty when compiling material for his *History of Otology*. In spite of advancing age Politzer is still vigorous, and the scientific leader of his speciality in this country.

At a recent meeting of the Medical Councils of Austria, a strong feeling was expressed that legislation was necessary in view of the increasing leniency with which quacks were treated by judges. As the present law is too elastic in this respect, the following amendment was recommended by a resolution to the House of Parliament now sitting.

Whoever undertakes to treat or cure one or more persons, whether receiving for it any payment or not, without being in possession of a fully recognized diploma granted by a medical faculty of the Austrian Empire, or producing a duly recognized and notified diploma granted by a foreign medical faculty, shall be charged with committing a crime, punishable with imprisonment of at least one month, and not exceeding three months. Only in cases of emergency and on special occasions shall any exception to this regulation be admitted.

Should death follow such unqualified treatment, a charge of manslaughter or murder, according to the circumstances, shall be made against the person responsible for the result. A stricter supervision of the so-called readymade medicines (we have no patent medicines in strictly the same sense as the English proprietary medicines) was also demanded, especially these dealing with "masculine weakness" and similar conditions. A mysterious poisoning affair, in which a military officer fell a victim to a powder disguised under the mantle of a patent medicine of this kind, has called the attention of the general public to the possibilities of an uncontrolled abuse of public credulity.—The *British Medical Journal*, February 19, 1910.

## CLINICAL RECORD.

## Foreign.

## CLINICAL CASES.

BY DR. T. G. STONHAM.

*Baryta-Mur.*

RICHARD M., aged 60, a cabinate-maker, came to me in November, 1908, suffering from emphysema and bronchitis, with accompanying dyspnœa and expectoration. He had suffered in this way for the past three winters, being quite unable to work, and had attended as an out-patient at the London Homœopathic Hospital. He got better and lost his cough in May or June each year, but became ill again as the winter approached. On examination he was found to have pronounced emphysema; there were rhonchi throughout the chest, and crepitations at the bases. At the right base the breath sounds were also very deficient, and there was dulness due to an œdematous condition. The apex beat of the heart was in the nipple line and under the fifth rib. A double murmur, systolic and diastolic was heard at the apex and over the lower part of the sternum at its left border. The heart sounds occurred in groups of two pairs, first an easily heard systolic and diastolic sound with which the murmurs occurred, and then a very faint systolic and diastolic sound, with which no murmur could be detected. The pulse at the wrist was 38, but the heart systoles were 76 to the minute, the second systole being too weak to give a pulse at the wrist.

Cough was very troublesome, especially at night, and expectoration copious, white and frothy. There was great dyspnœa, so that he could hardly climb the stairs to my consulting-room. Through November, December and January he was treated with *Digitalis* 1<sup>x</sup>, *Phos.* 6 and *Kali carb.* 6 in turn with some improvement to the cough, but none to the circulation. On March 9th he was given *Baryta-mur.* 3<sup>x</sup> t.d.s.

*March 23rd.*—He reported that breathing had been much less distressing, and that he had had better nights. There was less phlegm. Repeat.

*.30th.*—Still better. The pulse at the wrist now 80, the same as the heart systoles.



*April 6th.*—Pulse at wrist 72. Much better in every way. Repeat.

*May 28th.*—He has been away at Bournemouth and has come back without any cough. Feels well, but is breathless on exertion, and the heart murmurs continue. The heart beats are, however, much stronger, and the pulse at the wrist normal and regular.

This patient has chronic degenerative changes, which will prevent any complete recovery, but it illustrates how much improvement can be effected by *Barium* in this class of cases.

#### ENURESIS.

G. R., aged 4, was brought on June 10th, 1909, for enuresis. His mother said that he wet the bed every night, often more than once a night, and had done so continuously since babyhood, except that occasionally a week would pass without an accident. The child was somewhat delicate, but had no definite disease. He was dull and apathetic. Having recently read in the *Lancet* the cases of enuresis recorded by Dr. Leonard Williams, of the French Hospital, in which he had been very successful in treating this complaint with doses of  $1\frac{1}{2}$  to  $2\frac{1}{2}$  grains of *Thyroid extract* daily, I decided to give it a trial, but in much smaller doses. He was given *Thyroidin* 3 $\times$  2 tabs. *ter. die.*, and 2 drachms of *Malt and Cod Liver Oil* twice a day.

*June 17th* (a week later).—No change. Repeat.

*June 24th.*—Enuresis has only occurred once since last visit. Repeat.

*July 8th.*—Enuresis twice in fourteen days. The appetite is better and the patient is brighter and more lively. Repeat.

*February 24th, 1910.*—Has not wet the bed at all since last here, seven months ago, and has now come to be treated for a cough.

*March 3rd.*—No return of enuresis.

#### ARRESTED MUSCULAR DEVELOPMENT.

E. C., aged  $2\frac{1}{2}$  years.

The patient began to walk when ten months old, but he does not improve in walking, and still stumbles as when first learning. His legs often seem to give way suddenly, and he cannot walk further than a short distance. He projects his shoulders forward while walking as though he would fall on his face. The left ankle is weak, and the left foot becomes trodden over. He had measles a month ago, but has walked no worse for that. He often wakes up in a fright and screams. On physical examination the muscles

were not found to be wasted nor hypertrophied, but he got up from the floor like a child with pseudohypertrophic paralysis. Reflexes normal. Very nervous and easily frightened. The case seemed to be one of arrest in muscular development.

*May 30th, 1907.—Phos. 6 mij t.d.*

*June 6th, 1907.—*Walks much the same. Urine offensive. Sleeps better, and is less nervous. Has passed blood in the stool once. Repeat.

*June 18th.—*Much better in every way, and walks much better.

In a short time he walked as well as any child of his age.

#### APICAL BRONCHITIS.

A. S., 11 years old, was brought on October 21st, 1909, for a cough which he had had for a fortnight, and which was similar to a cough which he had had all the previous winter. Two years ago the patient was an inmate of the Temperance Hospital for keratitis, and he has since attended the City Road Eye Hospital for the same complaint. The eyes are quite well now. When seven years old he had "fluid under the knee cap." He has one peg-top shaped upper incisor. He sleeps well, but is restless in his sleep, and always feels poorly in the morning. The father is in good health, but many of his relatives are consumptive. The mother has always had good health.

The parents have had six other children, and the following is their history :—

First child was born dead.

Second child, a girl, now fifteen years old, and in good health.

Third child, the patient.

Fourth child, a girl, died six weeks old from marasmus.

Fifth child, a boy, seven years old and well.

Sixth child a boy, died five months old from consumptive bowels.

Seventh child, a girl, now four years old and well.

The family thus shows a curious alternation in health : the first, third, fourth and sixth having all been diseased ; one born dead, two died, and the patient with symptoms of hereditary syphilis. The intermediate children, viz., the second, fifth and seventh are all alive and well.

Physical examination showed crepitations and râles and rhonchi under both clavicles, the rest of the lungs being free.

The case was one of apical bronchitis in a patient the subject certainly of hereditary syphilis, and probably also with phthisical taint.

October 21st, 1909.—He was given *Syphilinum* 200 one dose and *Bryonia* 3 *mij ter die*.

November 4th.—Cough gone. Feels much better in general health, and is brighter.

The *Syphilinum* 200 was repeated at fortnightly intervals for four doses, at the end of which time he was in normal health, and all physical signs have cleared away from the lungs.—The *Homœopathic World*, April 1, 1910.

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### A CLINICAL CASE.

H. L. ALDRICH, M. D.

John H.—Aged 44. Single. Ten months before, while lifting a heavy long, suddenly felt a sensation as if something had given away in his abdomen.

The next time he urinated he passed some thick blood, and there was a feeling of lameness all through the lower abdomen. Getting rapidly worse, he was taken to a hospital at Lincoln and examined. The diagnosis was that a prostatic abscess had ruptured into the bladder during the strain of lifting and that the best chance of recovery was in an operation. Patient did not consent to an operation and was then told to go South for his health.

He then came to me for treatment. I found him weak, unable to work, and only capable of walking a few blocks. Frequent urination; urine contained pus and blood. Had to urinate every hour during the night hours; not quite so often during the day. Cutting pain in the bladder after urination. Unless the bowels moved every day the pain was greatly increased; probably from the close proximity of the rectum to the prostate. *Arnica c. m.*, three powders.

Seven days later he reported better; had to get up but twice during the night at the time of this visit. Placebo.

Seven days later reports slow but continuous improvement. Feels stronger; does not pass much blood now.

Fourteen days later reports not quite so well; thinks that he has exercised too much. He says that he hates to wash, and always did. Urination more frequent, and some burning. Sulphur 1m.

Seven days later weakness better, but much burning in the urethra after urination. No blood, but still a little pus. Has to urinate three times in the night. Cantharis 1m.

Seven days later reports all symptoms better. Placebo.

Three weeks later he reports that he is feeling quite well, and able to do light work for the first time since injured.—*The Medical Advance*, April, 1910.

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### CLINICAL CASES.

BY J. B. CAMPBELL, M.D.

**OTORRHOEA.** THUJA—E. S., aged 28, had an offensive otorrhœa from both ears, with impaired hearing, for many years. His condition was aggravated by a gonorrhœa, and was further complicated by the cauterization of co-existing venereal excrescences. He received Thuja, which ameliorated the condition perceptibly, but the urethral discharge returned, as did also the verrucæ in size and number. Medor. c.m., Sul. and Merc. sol. 200, which were given at different times, seemed not to affect the case at all.

Having observed, in the provings of X-ray upon myself and others, the remarkable power of that agent to delve into the recesses of the organism, thereby bringing hidden things to light, I gave X-ray 6 (Fincke), with marked and immediate aggravation of all the existent symptoms, and with certain additions, such as a copious and acrid nasal, as well as aural, discharge. Thus the sphere for application of Merc. corr. became sharply defined, and its administration was followed by rapid disappearance of the venereal excrescences, and by the later complete disappearance of the older symptoms of otorrhœa and deafness.

**ARTICULAR TUBERCULOSIS**—A boy, aged 3 years, had the left leg amputated at lower third of femur for what the diagnostician said was tubercular disease of the knee joint. The stump did not heal, but for eight or nine months discharged a greenish, glutinous pus. Meanwhile nightly aggravations of pain in the remaining leg, extending from hip to knee, gave evidence that the constitutional dy-

scrasia was in nowise subdued. The pain, which was excruciating, extorted screams and prevented continuous sleep.

This child was conceived under sycotic influence. Father and mother had gonorrhœa at time he was born. Evidence of the systemic inroads of the miasm was seen in the temporary teeth, which when erupted appeared almost as black as tar.

Treatment began with Bacil. 200, which was repeated every fifth or eighth day for about six weeks. Sil. 200 was then given four times daily, and, save for occasional intercurrent doses of Sul. c.m., was continued over a period of two years. The boy is now 11 years old, and is as well as most children. There is not the least doubt that under the conditions of pain, tenderness and systemic disturbance at the beginning of the renewed aggravation, the surgeon who amputated the first time would have performed a second operation on the other leg.

MARASMUS. CALC. CABB.—H. K., 2½ years. Given up by old school physicians. Weakly irritable and whining. Sweat about head, which he was unable to lift from pillow. Face preternaturally senile. Complete anorexia. Emaciation extreme. Abdomen greatly enlarged, and hard as a board. Cal. 45 m. One dose dry and S. L. for one month. First improvement was manifested by desire for cake, which I allowed. For one month improvement was generally, though gradual. At the end of a month case seemed to stagnate, and one more dose of Calc. c.m. was all the medicine he received. In two months from the first visit he was down playing on the doorstep with the other children. This was many years ago, but I have never done better work since.—*The Medical Advance*, April, 1910.

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## Gleanings from Contemporary Literature.

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### MODERN METHODS OF SEWAGE DISPOSAL

By CHARLES F. MEBUS, C.E.

*Scranton, Pa.*

Civil Engineering in the early days had to do principally with such work as measuring land, laying out roads, canals and rail-roads, and the construction of viaducts and bridges or work entirely of a mathematical and constructive nature. The rapid development of this country has largely been made possible by the work of the engineer.

In more recent years, the needs of populous communities have brought before the engineer problems of a different character and a new branch of engineering known as "Sanitary Engineering" has been developed. Sanitary Engineering has to do with the heating and ventilation of buildings, purifying and supplying water, drainage, sewerage and the disposal of sewage, cleaning streets and destruction of garbage and wastes. These matters all directly affect the health of the people and it is not hard to see how the work of the physician and the sanitary engineer co-operate in the interests of public health.

The science of bacteriology has pointed out to both physician and engineer the causes of infectious diseases, and the ways in which they may be transmitted from one person to another, and to the engineer it has pointed out a way for taking out of the water the organic impurities. The work of preventing the spread of infectious diseases by supplying pure water and by disposing of sewage in a sanitary way has been largely done by the engineer. The disposal or purification of sewage by the aid of bacteria has been of comparatively recent discovery.

To better understand what "Modern Methods of Sewage Disposal" mean, it is perhaps well to see first what sewage is, why we have it and what measures have been taken by the authorities to keep natural water courses free from it.

Sewage may be considered as coming from two sources, *viz* : domestic and manufacturing. In the former the sewage is but the water used in dwellings, to which are added all the filth and wastes from toilet, bath, kitchen and laundry. Years ago, before the introduction of running water into dwelling houses, the problem of disposal of the human wastes was done in a more primitive way than at the present time, but often with great menace to health, especially in communities where the water supply for the house was taken from a well which had more or less direct connection through the ground with the cesspool. The introduction of running water and modern plumbing in dwellings has not only added to the convenience of living, but even to the health of the people, provided of course, that the water supply through the house is pure and that the wastes are quickly and positively removed. At first, such wastes were

but conducted into a nearby cesspool and this is even done now, but where the soil is heavy, such a scheme will soon become a nuisance and connection with some public or private drain or sewer system becomes necessary in populous communities.

Wastes from manufacturing establishments are produced in the same way as domestic wastes, that is to say, water is used in industrial establishments for washing, dyeing, cleaning and other purposes, and while being so used is mixed with dirt, filth, dye stuffs, soaps, acids and other matters which make it impure. Naturally the easiest way to get rid of it all is to conduct it away from its source by pipes or sewers to some water course.

Now the discharge of domestic and manufacturing wastes into streams, has in innumerable cases become a nuisance and property owners, municipalities and water companies who had a common law right to the use of the water of the stream in its pure state, below the point of the discharge of the waters or sewage, were obliged to appeal to the courts to abate these nuisances. Such procedure was not only slow, but expensive, and often ineffectual, and as stream pollution increased, the legislatures of the various States took cognizance of the evil by enacting laws forbidding stream pollution and empowering certain officials to deal with violations of the law.

Massachusetts was the first State to enact legislation of this kind. It also created a Board of Health, which began more than twenty years ago to investigate the changes taking place when sewage is treated on various forms of filters. Both chemical and bacteriological investigations were made and the reports of the State Board of Health of Massachusetts, containing the results of these investigations form a most valuable part of the literature of the purification of sewage. This Board not only made investigations, but gave advice to municipalities and others within the State concerning filtration of water and purification of sewage, and so it came about that much important work was done in this State considerably in advance of other States. The work became a model for others, and the men connected with doing it acquired a prestige which they easily hold to the present day.

Other States, too, in time began to take an interest in health matters and State Board of Healths became more and more active, State Legislature from time to time gave such Boards greater authority until a number of them became, as they should be, one of the most important official bodies in the State.

Pennsylvania had for years a State Health Board on which served many able men, but no account of the limited means with which the Board was provided and the small powers it had, it was never able to accomplish a great deal. In 1905 the late Senator Roberts of Montgomery County, introduced a bill in the Legislature abolishing the old Board and creating the new office of Commissioner of Health. This new officer was vested with great power and supplied with ample means to carry out almost any

work in the interests of the public health that he might see fit. The Governor was fortunate in securing for Commissioner, one of the best, if not the best, equipped man in the State, and so well has the present State Health law been administered, that the Legislatures of other States have enacted either the Pennsylvania law almost in its entirety, or revised the existing laws so as to conform practically to what we have in this State. So that to-day seven or eight of the most important States in the Union are actively engaged in a campaign against all communicable or infectious diseases. Part of this work naturally covers the prevention of stream pollution of State waters. Not only are these State Boards working along the same lines in their respective territories, but they are also co-operating in the work of freeing the interstate waters from pollution. At the present time the Boards of New York, New Jersey, Pennsylvania and Ohio are working together in this way, and possibly others.

The same problem which confronts our own State at the present time has confronted the older countries in Europe years ago; especially is this true of England, where the streams are small, population dense and the manufacturing industries numerous. English municipal corporations have, within the past thirty years, expended millions of pounds Sterling in the construction and operation of sewage disposal works and the work is still going on. So many men have been working on the same problem practically at the same time, but in different cities all over Great Britain, that almost every scheme of sewage purification that gave any promise at all has been exploited and while English experts are still not united as to the best method to employ in every case, yet the art of sewage purification has been developed along practical lines to such an extent that almost any sewage may be purified to whatever degree is necessary or desirable. Improvements, of course, are to be looked for, and it is to be hoped that shorter and less expensive methods will be brought out in the future.

The work done in England has become known all over, English sewage disposal works have for years been a Mecca for engineers and others interested, and on the visitors' book which is kept at nearly every works, one may find the names of men from all over Europe, Africa, India, Australia, Japan and America. Much too, especially in the last 15 years, has been written about English works and it is not surprising to find Germany and America adopting the latest English scheme.

The first scheme, known as "broad irrigation" was to spread the sewage over land. For this purpose, land is generally ridged and furrowed and in some instances, even underdrained. The sewage as it is discharged over the fields, runs along the furrows and is gradually absorbed by the soil. From two to ten thousand gallons of raw sewage may be treated on one acre of land in 24 hours in this way. Successful sewage farming depends, of course, largely upon the character of the soil and unless the same is dry and porous, the scheme is hopeless. A number of English cities still treat their sewage on land either in its raw state or after it has



been subjected to some preliminary treatment. The sewage farms of Paris and Berlin are probably the best known. The latter is operated some years at a small profit. Broad irrigation has been used to some extent in this country, but only with success in the arid lands of the far west. In Southeastern Pennsylvania a number of smaller farms have been laid out for this use but all of them are either now, or will be in the near future, abandoned, for the reason that the heavy soils found in this locality are quite unsuitable and during periods of heavy rain and extreme low temperature, the sewage is not absorbed and therefore reaches the streams with but a small per cent, if any, of its impurities removed.

Broad irrigation will no doubt be used for a long time as a means of sewage purification for country houses and small institutions, or where much ground is available for comparatively small quantities of sewage.

A second method of purification, much used in Massachusetts and to some extent in other States, is very similar to broad irrigation, and is known as "Intermittent Sand Filtration." In localities where suitable sand for preparing filtration fields may be cheaply obtained or where it may be found in place, no better scheme can be adopted. The sand fields may be underdrained at a depth of about two or three feet. The entire filtration area is divided into a number of small fields or beds on which the sewage is discharged in rotation. For example, the sewage may be spread on one bed for a period of 24 hrs. or less, and then on the next following bed and so on, the first bed resting until all the others have been dosed in turn. By this method, comparatively high rates can be obtained, possibly 100,000 gallons or more per acre in 24 hours, the rate depending of course largely on the amount of suspended matter in the sewage, the temperature, porosity of the sand, rainfall, underdrainage and intelligent superintendence.

The difficulty of procuring land suitable for broad irrigation near to cities and at a reasonable cost, is one of the reasons that investigations along other lines were made, and the next development in sewage purification was by chemical means. In the above processes sewage was simply spread over land in practically its raw state or with no other preliminary treatment than passing it through a screen, which made it possible to purify but a small amount of sewage per acre. A method for taking out a large part of the suspended matter before applying the sewage on land or discharging it into streams was therefore most welcome and the first scheme which offered itself was one employing chemical. In this method the sewage is allowed to stand for some time in large rectangular tanks and while it flows into the tanks it is mixed with the chemical compound such as ordinary lime, ferric sulphate, aluminum sulphate, alumino-ferric or sulphuric acid. The chemicals cause the suspended matter in the sewage to fall to the bottom and hence the name "chemical precipitation." The clarified water may afterwards be drawn off and discharged directly into the streams where a low degree of purification is permissible : or

further treated on land or some form of bacteria bed where a high degree of purification is required. About 50 per cent. of organic matter is by this process removed, and this residue or sludge which collects in the bottom of the precipitation tank must in some manner be disposed of. Sludge contains about 95 per cent. of water and in this state, except under especially favorable circumstances, is quite difficult and expensive to handle it may be further stated that with chemical precipitation, the amount of sludge produce is always in excess of the total solids in the sewage, whereas, with the biological treatment, the reverse is true. In England the sludge is generally forced on ridged or furrowed fields where it is left to dry and is then ploughed into the soil ; or it is subjected to further treatment by the addition of more lime and then forced into especially designed iron presses where all the water is extracted and a dry cake obtained which has some value as fertilizer. In some cases this cake is also mixed with coal and burned in steam generating furnaces. In Germany, in the "System Roths" the sludge cake is mixed with coal and burned in the producer gas generators. Cities located on the arms of the sea, such as Manchester, Salford and London, dispose of their sludge by forcing the same into specially designed tank steamers which take it out and discharge it into the sea. Within the last year or two there was put in use in Germany a centrifugal drier which promises much success. A similar scheme is in use at Reading, Pa. In manufacturing centres where the trade wastes are rich in fats, an effort has been made to extract the same with a view of deriving some revenue from this by-product. A large works for this purpose has been erected in Bradford, England, and is operated with some degree of success. Similar works, I believe are in use in Germany and it is reported that a plant of this kind is in course of erection at Oldham, near Manchester.

Chemical precipitation, with or without subsequent land treatment was extensively used in England and to some extent on the Continent for perhaps 20 years before the advent of the biological method of sewage treatment. It is even now used in English cities of which London is one, where at Barking and Crossness, on the Lower Thames, about 250,000,000 imperial gallons are treated daily. In this country chemical precipitation never gained much foothold but I believe that about 15 years ago some ten or more towns were using it. At the present time, few, if any, are doing so.

Although for many years sewage was treated on land, it was not until about 1885 that it was learned through bacteriology the nature of the changes that take place in the sewage after it was absorbed by the soil. The discovery that low forms of vegetable life known as "bacteria" or "micro-organisms" effected a chemical change in the organic matter in the sewage led the way to the preparation of artificially prepared beds or filters in which conditions were obtained favorable to the development of such bacteria as have the power to oxidize organic matter. The first

real progress or practical application of sewage purification along biological lines was made in England, where artificially prepared beds were constructed about 1895 at Exeter and Sutton. The process of purifying the sewage biologically is a compound one, that is to say, it is done in different stages and will require from two to four stages, depending upon the degree of purification required.

As the bacteria bed in any multiple stage system of purification effects the greatest individual change in the sewage, it is, perhaps, a good plan to consider it first and the other parts of the plant as pertaining to it.

The object of the bacteria bed is to hold back the organic matter in suspension in the sewage while the same passes through the beds and at the same time to allow the oxidizing or nitrifying bacteria to transform the organic matter into harmless compounds. This is accomplished by passing the sewage through some form of coarse grained filter, and roughly speaking a bacteria bed may be said to be a filter, which is constructed and operated in various ways.

The plan of a bed is generally rectangular, the depth of the filtering material may vary from three to six feet and the dimensions of the bed in length and breadth or the superficial area must, of course, vary with the amount of sewage to be treated in a single dose, while the entire area is determined by the total flow in 24 hours and the rate of treatment per square foot in the same time.

Bacteria beds are of two kinds, viz.: contact and percolating, the latter being perhaps better known under the name of "sprinkling filters." For a contact bed it is necessary to have a water-tight compartment in which is placed the filtering material. Usually the side walls and floor of the bed are constructed of concrete, brick and stone masonry. On the floor, which should be so constructed as to drain to one point are laid underdrains and coarse materials, and on top of this is spread the filtering material which is always coarse grained, sizes may be used varying from  $1\frac{1}{2}$  to 4 inches, but should be so laid that the several sizes shall be in layers rather than indiscriminately mixed. Provision must also be made for the free passage of air through the filtering material and this is done by bringing up through the body of the bed from the underdrains, pipes which extend above the surface of the bed. The contact bed being a water-tight compartment, must necessarily have an outlet and an inlet controlled either by gate valves or other automatic air-locking devices. The inlet may either be above or below the surface of the filtering material but the outlet must necessarily be at the bottom and should be at the low point in the floor so that the contents may be completely drained away.

The operation of a contact bed is quite simple. The bed is first filled with sewage, then allowed to remain for an hour or two, when the sewage is drained off and the bed is allowed to remain empty or to rest for a period of six or eight hours or more. The organic matter in suspension

and in solution is deposited on or attracted to the coarse grained materials and held while the sewage is slowly drawn off. During the resting period the void in the filtering material becomes filled with air and the oxidizing of the organic matters held back is effected. The length of the period of rest determines largely the degree of efficiency of a contact bed but it is quite impossible to obtain a high rate of purification by passing the sewage through a contact bed but once and therefore at a number of plants the sewage is passed through a second bed and even through a third. The sewage might be said to be passed through beds in series and the system is known as "single," "double" and "triple" contact as the number of beds used in series is one, two or three.

The contact bed was more favorably considered as a means of sewage purification ten years ago than it is to-day, but its field of usefulness is by no means ended and notwithstanding certain drawbacks which are inherent in it, conditions, where no other form of bacteria will answer, doubtless will be found as sewage purification becomes more general.

All the matters taken from the sewage and held by the filtering material are not completely destroyed and therefore the voids gradually become less and less and so in course of about five years, it may be necessary to clean the filtering material; or again, if filtering material is composed of cinders or other perishable material as is generally the case in England, much of it in time becomes disintegrated, necessitating cleaning on this account. This is an expensive and undesirable operation.

The corporation of Manchester, England, which has a population of nearly 600,000 decided in 1900 to change its method of sewage purification from chemical precipitation to biological, and ordered the construction of contact beds to the extent of 92 acres on which about thirty or more million gallons are daily treated. This is the largest single contact works in existence and will remain so, as the probabilities are that no large works will ever again be put down on this plan. Contact works of all sizes and types are numerous all over England and there are a few in this country, examples worth mentioning, are single contact at Charlotte, N. C., double contact at Plainfield, N. J., and Balston Spa, N. Y., and single contact with subsequent sand filtration at Marion, Ohio.

Contact beds may be operated at a rate varying from three hundred to seven hundred thousand gallons per acre per day, the highest quantity being seldom obtained.

The next in order of development is the percolating or sprinkling filter. This, too, is a bacteria bed in every sense of the word, the difference being wholly in the method in which the sewage is applied. In the contact bed, as has already been seen, the sewage is allowed to fill the voids in the material completely and then after standing for a period, it is all drawn off. Now, in the percolating filter, the sewage is spread over the top of the bed and allowed to trickle down through

the filtering material, the voids of which are never completely filled, air always being present and therefore the action of oxidation or nitrification is always going on while the bed is in commission.

The body of the bed of the percolating filter is also made of coarse grained material, of sizes varying from perhaps  $\frac{1}{2}$  to 4 inches, spread in layers in the same manner as in a contact bed. The thickness or depth of the bed may, however, be six feet, and no water-tight construction is required, in fact, the bed is generally constructed entirely above the surface of the ground. The retaining walls for the filtering material are laid up in the form of a dry wall or, as is quite frequently done in England, of brick masonry laid in cement with open courses. The floor, of course, is generally laid in concrete and must slope to the side or the centre where a collecting channel is provided. The plan of the bed is either circular or rectangular, to suit the particular form of spraying device used. The first, percolating filters in England were of the circular type, that is, the sewage was sprayed over the bed by means of perforated iron pipe arms revolving horizontally about a vertical axis in the centre of the bed. The sewage is conducted to the arms through a central feed pipe with a head of perhaps five or six feet and the mechanical action which causes the arms to rotate is in every respect the same as that of the Barker's Mill or the familiar lawn sprinkling device. The diameter of these beds may be from 100 to 2000 feet. The distribution with this method is very good but the scheme is rather expensive, not alone for the fact that the construction and spraying devices are costly, but also because much land between the circular areas used for the beds cannot be utilized. Another drawback is that in windy weather the arms may refuse to move. However this scheme of distribution has found much favor in England where many plants of considerable size are in operation, one of the best of which is at Derby, a city of over 100,000 inhabitants. This scheme is also finding favor in Germany, where there has been in operation for nearly two years a large plant at Stahnsdorf which treats the sewage of a number of suburban towns outside of Berlin. In this country, I believe, no rotary sprinkling plant has been used except for experimental purposes.

The second type of percolating filter is the stationary sprinkler. It was first used in England on an extensive scale at Salford, a municipality adjoining Manchester and containing about one-half as many inhabitants. With this scheme there is laid on top of the filtering material in gridiron fashion, from pipe, on top of which are set at regular intervals of about 10 feet, small brass nozzles. The sewage is forced through the nozzles under a head of about five or six feet, which causes it to spread out over a circular area having a diameter equal to the distance between the nozzles on the pipes. The largest works of this type are at Birmingham, England, where 26 one-acre beds are now in operation, which take the city's sewage amounting to nearly 30,000,000 gallons in dry weather.

Before the percolating filters were used at Birmingham the sewage was treated on land for which purpose the corporation provided 1,700 acres, and even this large area was insufficient for properly purifying the city's sewage during the last few years.

The Birmingham plant is the model after which all the recent large sprinkling filter plants in this country have been patterned. Columbus, O., Washington, Pa., and Reading, Pa., are the largest plants now in operation. This type of distribution is adapted equally well to small and large installations and for this reason as well as from the fact that the entire bed may be sprayed automatically by means of a syphon discharging at intervals into the distributing system without the intervention of any moving parts, it will, no doubt, be extensively used within the near future. It might be added that plans for sprinkling filters have been adopted by the Department of Health for nearly all the large State Hospitals, some of which were designed by the author.

As already stated, the American plants are modelled after the English, the main difference being in the position of the distribution system, which in this country is laid through the body of the filtering material and in the type of the nozzle used. American nozzles are considerably simpler than either the Birmingham or the Salford nozzle, and spread the water over a slightly greater area.

Other distribution systems which accomplish the same results as the types of distributors already described have been put in use in England within the last few years, the one is a water wheel device in which an undershot wheel of a small diameter and with an axis equal to the width of the bed distributes or splashes the sewage over the bed from the vanes into which the sewage is discharged from an overhead moving tank. This device may be so arranged that the distributor which sets on carriages moves over the bed by reason of the sewage falling into the vanes of the wheel. This type of distributor is equally well adapted for circular and rectangular beds. Another distributor for rectangular beds is moved backward and forward by a cable and sprays the sewage in the same manner as do the rotating arms of the spraying device for circular beds first described.

As stated at the beginning, the biological process is done in stages of which the bacteria bed is but one. It is quite evident that were raw sewage allowed to flow into a contact bed the voids would soon become clogged and in the same manner, if it was attempted to spray raw sewage over a percolating bed the small orifices or nozzles would be choked up all the time. Now in the original contact beds at Sutton, the attempt was made to treat the sewage raw, or at least with but preliminary rough screening in the contact beds and the trouble of the filling up of the voids in the filtering material was soon encountered. While on the contrary, Exeter, where a preliminary tank treatment was employed, the beds did not choke up. It is therefore seen that some form of preliminary

treatment becomes necessary and the one that gave at first the greatest promise was the tank treatment at Exeter with the inventor, Mr. Cameron, called a "septic tank," and which has been ever since the model for all tanks, good, bad and indifferent, of a similar description. In fact, the septic tank has for some reason or other, obtained such a hold on the popular mind that one not infrequently hears the name "septic tank" erroneously applied as a system of sewage purification complete in itself.

The purpose of the preliminary tank treatment, be that the so-called septic treatment or just plain sedimentation, is to remove from the sewage as far as possible all matters in suspension. At first it was thought and even claimed that the septic tank, or rather the bacteria in it, would destroy, liquify or gassify a large part of the organic matter in the sewage and for this reason it was thought by some enthusiasts that septic tanks would never need cleaning and that the sludge problem which had heretofore caused so much trouble, was for all time successfully solved. Years of use however, proved different. The depth of a septic tank may be from 6 to 12 feet or even more. The length may be from 3 to 5 times its width and of course in larger works it is quite desirable to have a number of tanks, or one tank divided into a number of rectangular compartments. In operation, the sewage is admitted at one end of the longer axis by a submerged inlet and then flows slowly towards the opposite end where it discharges through a submerged outlet. In the original tanks the capacity was about equal to the entire daily flow of the sewage and therefore it required a period of 24 hours for the sewage in the tank to be entirely displaced by the succeeding day's flow. It is quite apparent that with such slow velocity all matters heavier than water would fall to the floor and matter lighter than water would rise to the top. Now, the bacteria which may develop in a tank of this kind do so without air and are known as the anaerobic type. A certain amount of liquifying and gassing does result in the organic matter in the sewage and probably a net change of twenty-five per cent may be obtained. As has already been remarked, a certain amount of sludge will accumulate in the bottom of the tank and in all well designed plants provision is made for dealing with it.

English engineers have not so closely followed the idea first brought out by Mr. Cameron at Exeter, partly because many English plants were originally chemical precipitation plants which necessitated the construction of large rectangular tanks and therefore, when subsequently it was decided to use some form of bacteria bed, perhaps for economy's sake if for no other, the chemical precipitation tanks were used as septic or sedimentation tanks. Another form of tank used for a number of years in Germany is cylindrical in plan with a diameter of perhaps 25 feet and a depth of even more. The bottom of this tank is in the shape of an inverted cone, the sewage is discharged at or near the bottom and flows out over a weir extending across the center of the tank at the top. The sludge accumulates in the conical bottom and may be forced out by the head of the water

above it where an outlet sufficiently low is available, or else drawn out by suction. This tank is known as a "Dortmund" tank and is used in Birmingham, England, in connection with the rectangular sedimentation tank; both before and after the sewage passes through the percolating filters. At Birmingham, the original sewage farm, on which this plant is located, has a length of about five miles. The main sewer from Birmingham discharges at the upper end of the farm where the sewage is screened and passes through a series of rectangular tanks. From these the sewage flows through a conduit for a distance of almost six miles and then through the Dortmund tanks with the object of further taking out the suspended matter and from the Dortmund tanks the sewage is sprayed over the beds under a head of about five feet. The effluent from the bed is again collected and passed through a second Dortmund tank to take out the humus or stringy matter which detaches itself from the filtering material and is carried along with the effluent. In fact, it appears to be quite necessary with all the percolating filters where coarse grained material is used to subject the effluent from the beds to secondary sedimentation.

Sewage treated in the manner described on percolating filters may be expected to have ninety per cent of its organic matter removed when operated at the rate of one to two million gallons per acre per day.

It must not be overlooked that some form of screening before sewage is admitted to a septic or sedimentation tank is quite desirable and an almost innumerable number of screening devices have been constructed and are being used in various parts of the world. Where power is available to employ some form of rotating or self-cleaning screen, much may be accomplished in this way.

The degree of purification from a single contact bed may be from 65 to 85 per cent., and where a higher degree is required, recourse must either be had to treatment in beds in series or sand filtration. The same is true of the effluent from a sprinkling filter. The effluent from either of the bacteria beds should be so clear that sand filtration is possible at comparatively high rates. Sand filtration is, of course, expensive in many cases, especially where sand suitable for such purposes must be conveyed a great distance. If therefore, it becomes necessary to make sure that all pathogenic bacteria in the sewage be completely destroyed, there is still another method available, viz., disinfection or sterilization. The original outlay for a scheme of this kind is of course, small, but there is a daily expense for chemicals. Experiments have been made in Germany, England and in this country, and a number of chemicals such as lime, sulphuric acid, copper sulphate, chloride of lime and others may be successfully employed, but the expense seems to bar out all but chloride of lime at the present time.

In a general description such as this, but one more point need be considered and that is, operation and supervision. In all English works



of considerable size, an educated engineer or chemist will be found to be in direct charge. Laboratories are generally found at the works and a chemist or chemists constantly employed. Tests of the sewage raw and in its various stages through the works are daily made and records are systematically kept so that a work manager knows exactly the performance of his works. It is not surprising, therefore, to find that these men really know what they are doing. In England, it is, of course, quite necessary that works be managed in this way, as the Local Government Board which has charge of the purity of the streams in the drainage area over which it presides, makes a practice of regularly inspecting the effluent in the various sewage works and testing the same, to see that the standard set by it is obtained. Smaller works always have some attendant, even though the size of it does not warrant the regular employment of a chemist. One may, however, be quite sure to find almost every plant in charge of a competent and conscientious man and may be equally sure to find that the best possible results under the existing conditions are obtained. If municipalities in this country are to spend large amounts of money to construct purification works, it will be necessary to employ similar methods.—*The North American Journal of Homœopathy*, Feb., 1910.

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[No. 6.

OUR LATE BELOVED KING-EMPEROR EDWARD VII.

The sudden, untimely death, from a preventible disease, of perhaps the greatest monarch of the present age after a reign of nine years only, has shrouded not only the whole of the British Empire but also wherever anything has been known of the late English sovereign with a profound gloom, and contracted us all, as it were, "in one brow of woe." Brought up under the tutelage of most expert educators, and the long-lasting benign influence of his illustrious mother, and coming to the throne in the sixtieth year of his age when his judgment had become mature and his feelings steady, King Edward VII literally reigned over the hearts of his people. Both as Prince of Wales and Sovereign of an Empire where the sun never sets, he identified himself with the joys and sorrows of those committed to his care, devoted the best of his powers to their service, whether in health or in disease, and never had to grieve like Titus that a day was lost. Even during the last days of his life his attendant physicians could not prevail upon him to abstain from his lofty occupations until absolutely incapacitated by complete prostration. Whether engaged in the task of providing decent homes for the poor of London, or in supplying means of livelihood to "the worn-out veterans of industry," or

in conveying the benefits of the healing art to the sick poor, or in performing his glorious work as the World's Peace-Maker, or in discharging the thousand other duties that engrossed his attention, he has left indelible marks on the twentieth century. The *Homœopathic World* pays deserved tribute to the great King-Emperor for his impartial administration of "King Edward's Hospital Fund," in which he allowed "no distinction to be drawn between Official Therapeutics and Homœopathic Therapeutics," nor made any discrimination between orthodox and non-orthodox opinions in medicine.

Our King-Emperor's interest was not confined to the people of his own race or religion. India had a large share in his heart. Ever since he had become aware of her fallen condition, his attention to her never flagged. He bound her to himself on the occasion of his visit to this land thirty-five years ago, the incidents of which are still fresh in the minds of all Indians who had knowledge of them. He opened the gates of his heart in his Message to India on the anniversary of Queen Victoria's Proclamation, and the extension of popular rights announced in that Message has created a new era in the history of this ill-fated country. To the followers of Samuel Hahnemann, it is a matter of great regret that "the resources of our art," to quote our London contemporary again, "were given no chance to try their skill against the foe that overwhelmed that beloved life" It is no less a matter of regret to the people of India that Providence denied him opportunities to witness the fruition of the scheme of Reforms promulgated under his authority for the onward progress of India. But while we mourn the irreparable loss caused to us by the late King-Emperor's being taken away from our midst, we bless him, in the name of the Lord of the Universe, for having left behind a worthy successor in the person of King George V, to continue the glorious work of his great father and grandmother, and bring about the Imperial Unity on which his heart is centered in a manner never dreamt of before.

## THE CHAIR OF ANATOMY IN THE CALCUTTA MEDICAL COLLEGE.

We hail with joy the announcement that Lord Morley, Secretary of State for India, has decided to cause the new Professorship of Anatomy in the Calcutta Medical College to be filled from outside the ranks of the Indian Medical Service, and that a properly qualified Indian Medical Officer in the Government Service is likely to get the appointment. The question of selecting Indian Professors for the Medical Colleges in this country was mooted three quarters of a century ago, and, if the decision now arrived at is acted upon as a permanent arrangement, a long pending question of vital importance to this country would be settled for good. As the general public may be curious to know the causes of this extraordinary delay, we propose to enter into a history of the measure, as far as we are able to trace it from records at our disposal.

When the British along with certain other European nations came to India for purposes of trade, the question of public health was regarded by them as something outside their province. Attempts were made for the treatment of the sick belonging to the service of the late East India Company, and Medical Officers were brought out from Europe to take care of them, but no attention was paid to the improvement of the health of the locality in which they dwelt. And the same indifference to sanitation continued to be shewn by the Company even when the affairs of the country compelled them to assume its government in their own hands. In the meantime economic and other considerations forced greater attention being paid to the health of the Company's troops so essential to keep the peace of the country in the midst of interminable feuds and turmoils, and the need for a better class of men than the native compounders and dressers trained in regimental hospitals, became evident. The correspondence on the subject which subsequently passed between the Medical Board and the Government of India in the Military Department led about 1822 to the establishment of a Medical School in which lectures on



Anatomy, Physiology, Medicine and Surgery were delivered by a competent European Medical Officer, assisted by trained Indians.

On the other hand the establishment of Supreme Courts of Judicature in the Presidency Towns, and the great necessity for a better class of Judicial and Police Officers in the Mofussil, forced the Government to turn their attention towards the intellectual improvement of India, but the Court of Directors were averse to spend money on it. Fortunately for this country an untoward event happened in 1813. In that year on the motion of Mr. Robert Percy Smith,—who had been Advocate General in Calcutta for several years and obtained a seat in Parliament on his return to England,—a rider was added to the India Bill, directing that a lakh of rupees should be appropriated “to the revival and promotion of literature and the encouragement of the learned natives of India, and for the introduction and promotion of a knowledge of the sciences among the inhabitants of the British territories out of any surplus which might remain of the rents, revenues, and profits of our territorial acquisitions.” This incident took place in the last year of the Governor-Generalship of the Earl of Minto, who devoted the state money allotted to education to improvements in the study of the Sanskrit, Persian and Arabic languages only. About 1815, Lord Minto’s successor (Lord Hastings) suggested to Mr. Charles Grant, the then Chairman of the Court of Directors, the propriety of appropriating the Parliamentary grant to the support of schools where English and the Vernacular languages were or might be taught to the exclusion of the learned Oriental languages. Mr. Grant replied that “there had always been in the direction men of influence opposed to the intellectual improvement of the Natives; they were gradually dying out, but it would still be premature to urge the course which the Governor-General proposed.” So the fund voted by Parliament was allowed to accumulate for ten years. In the intervening period of about 7 months between the retirement of Lord Hastings from India and the arrival of his

successor (Lord Amherst) in Calcutta, Mr. John Adam, the Senior Councillor, who acted as Governor-General, signalled his administration by appointing a Committee of Public Instruction to propose measures for the better education of the people in useful knowledge, and the Arts and Sciences of Europe, and for the improvement of public morals.

About this time the old Hindu College, a private institution established in 1817 by the inhabitants of Calcutta for teaching Literature and Science through the medium of the English language, got into monetary difficulties and was forced to apply to Government for pecuniary aid, and the Government of India sent to the Court of Directors a proposal to improve the Hindu College at Benares, and the Mahomedan College in Calcutta and to add to them a Hindu College in the Metropolis chiefly for teaching English. Mr. James Mill, a disciple of Jeremy Bentham and advocate of liberal principles, now filled an important post in the India Office, and had there gained that influence which as a matter of course is exercised by a powerful mind, and he drafted a reply to this despatch. In this reply it was stated that "in professing to establish seminaries for the purpose of teaching mere Hindu or mere Mahomedian literature, the Government bound itself, to teach a great deal of what was frivolous, not a little of what was purely mischievous, and a small remainder indeed in which utility was in any way concerned. The great end of Government should be not to teach Hindu or Mahomedan learning, but useful learning." Orientalism however was still supreme in Calcutta. An efficient College was established there for the cultivation of the Sanskrit language and literature, and the oriental languages continued to be taught to those who were willing to learn them, but as far as others were concerned, the Committee of Public Instruction said "we must at present look chiefly to the object of teaching what is most useful in Native literature, freed as far as possible from the lumber with which it is encumbered", and this they thought would be best done by imparting instruction through the medium of the English

language. English classes were accordingly formed in the Calcutta Madrassa and in the newly formed Sanskrit College. English schools were also attached to the Oriental Colleges at Delhi and Benares, and instead of establishing a separate institution in Calcutta for teaching English they decided to improve the then existing Hindu College by raising the standard of instruction, appointing a superior class of teachers, and by introducing more efficient control. The small grant at the disposal of the committee precluded them from doing anything further.

The Medical Institution for training Native Doctors for the army mentioned above, was chiefly recruited from the Upper Provinces, the majority of the pupils being sons of native non-commissioned officers and of native doctors and sepoys. There was only one European lecturer and some native assistants, and the medium of instruction was Hindustani, in which a few short tracts of a very elementary kind, chiefly translations, were composed. Dissections of the human body formed no part of the regular course, though the students are said to have occasionally assisted in dissecting such bodies, and only a very small amount of sound knowledge was imparted. At the demand of some of the students of the Calcutta Madrassa and the Calcutta Sanskrit College, Medical classes were formed in those institutions in the year 1826, or sometime after. In the class at the Madrassa some of the students read Arabic Medical works and the remainder Hindustani tracts published for the use of the Native Medical Institution. The desire for medical instruction appears to have been very limited, and the students made little progress.

The medical class in the Sanskrit College was placed under the charge of Dr. Tytler, and Dr. J. Grant was appointed Anatomical lecturer in 1831. Sanskrit Medical works were known to contain much useful information about certain drugs and articles of diet and about the diagnosis and treatment of many diseases, and some of the oldest works—Susruta for instance—contain minute instructions on the choice of subjects for

dissection, and for the management and disposal of them. Dr. Tytler and a few other medical men also knew of cases on which surgeons having in vain exhausted their skill, Kavirajs were successful in effecting cures "by remedies coarse indeed and rough, but which the events shewed to be efficacious." Some of these works were introduced in the class as regular text-books, and were supplemented by vernacular translations of European elementary works and by oral instruction from the lecturers. There was no adequate provision, however, for teaching practical anatomy, but a small hospital was opened to enable the students to study the phenomena of diseases at the bedside of the sick. The means thus placed at the disposal of the students not only enabled them to acquire a decent knowledge of anatomy, physiology, medicine and surgery, but to practise "bleeding, and opening of abscesses, dressing of sores and cuts, and the weighing and compounding of medicines." The students also became bold enough to declare before Lord William Bentinck's Committee on Medical Education that they were quite willing to acquire a knowledge of practical anatomy if the thing could be managed in secret.

About 1833 a discussion arose between the Committee of Public Instruction, and Dr. Tytler, Superintendent of the Medical Institution in Calcutta on the subject of Medical education, and Lord William Bentinck appointed a committee to offer suggestions for improving the constitution and extending the benefits of the Native Medical Institution. This committee recommended the abolition of the Institution and the two Medical classes, and the establishment in their place of a Medical College in which "the various branches of the Medical Science cultivated in Europe should be taught" through the medium of English. They further recommended that some of the advanced students should be sent to England to complete their education, and these students, they expected, would on their return to India be able to do duty as Civil Surgeons and act as Professors in the Medical College. But they had a very imperfect acquaintance with the Hindu and Arabic systems of medicine and their

opinions on those systems were too unfavourable for them to countenance the attempt to bring to light such portions of the Sanskrit medical works as might prove useful to the profession. Something in this direction has been done by men like Wilson, Wise and Royle and by some of the *Kavirajs* and Indian medical practitioners. The work however remains yet unfinished. The difficulties in the way are great, and it is doubtful whether they can all be surmounted by private enterprise alone.

The recommendations of the Committee were approved by the Governor-General in Council in January 1835, and the new college was directed to be opened as soon as possible. Assistant Surgeon M. J. Bramley was nominated Superintendent of the Institution with effect from 1st February next and shortly after Dr. H. H. Goodeve was appointed Assistant Superintendent to aid him especially in instructing the pupils in Anatomy, Pharmacy and Medicine. Protests against the inadequacy of the staff led in August next to the appointment of Dr. W. B. O'Shaugnessy as Professor of Natural Philosophy, Chemistry, Botany, Materia Medica and Pharmacy. The superior teaching provided for in the Hindu College enabled it to supply the best pupils to the institution, which was formally opened in an old building near the Hindu College, on the 1st June 1835\* with an inaugural lecture by Mr. Bramley explaining the general objects of the Institution. This was followed by a series of lectures on Osteology which were delivered tri-weekly till September following. The subject was treated at length, and many other points of Anatomy, and occasionally surgical observations, were introduced in appropriate places. The intermediate days were occupied with such subjects as were touched upon in the lecture of the previous day. In this way the large arteries and the principal muscles and nerves, noticed in the lecture as connected with any particular bone were explained and demonstrated.

On the reopening of the college after the Dusserah vacation,

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\* For this information and the general plan of teaching of which a succinct account has been given above, we are chiefly indebted to Mr. Bramley's annual report and to some of the inaugural lectures.

the next six months were occupied with a more extended course of lectures on Anatomy. During this course the bones were again dealt with and the muscles, arteries, nerves and viscera of the thorax and abdomen. Brain and the organs of sense were treated separately. A considerable portion of physiology was likewise included in these lectures. Bones, plates and models formed the chief materials for illustrating this course as well as the former one, but occasionally portions of animals lately dead and in some instances parts of the fresh viscera of the human subject were now introduced for demonstration. During both the courses weekly examinations were held to test the progress of the students, who were now required especially to demonstrate the bones and to explain and point out their relative positions, their connections, their various processes and foramina, with the parts attached to or passing through them, and their ultimate distribution. Some portions of Physiology and a few less important parts of Anatomy were reserved for the next course, the object being to impress on the pupils the broad principles of the science before dealing with the minutiae.

The summer session of 1836 was opened in March or April after the removal of the College to its present site, and was occupied with chemistry and medicine. Dr. W. B. Oshaughnessy devoted his whole soul to teaching the former subject. His lectures were as lucid as possible. He was not content with making the experiments himself, but made his pupils repeat them in his presence, till they had "made with their own hands almost every experiment that had been demonstrated at the lecture table."

The second regular anatomical course commenced in October when the students attended hospitals where they had opportunities to witness the examination of dead bodies and to handle portions of diseased structures met with there. They had also overcome their national prejudices against touching dead bodies, but were averse to being exposed to the gaze of outsiders at the time of dissection and were afraid of the penalty of excommunication from their castes. So they insisted that the

operation should be carried on in privacy. The necessary precautions were accordingly taken and all doubts removed on the 28th October. "On that day," to quote from Mr. Bramley's Report written within the next two months when the particulars furnished must have been fresh in his memory, "four intelligent and respectable pupils at their own solicitation, undertook the dissection of the human subject" and in the presence of their professors, and with the aid of fourteen of their brother pupils "demonstrated with accuracy and nicety several of the most interesting parts of the body."\* This course of lectures was to have terminated in March, 1837. But scarcely had that year ushered in when Mr. Bramley was suddenly taken away from this world. In him the college lost a most earnest and efficient teacher and supervisor, and the country one of its true friends; and the account of his anatomical class has been left incomplete. A public examination in anatomy was held in May or June, 1837, and two medals and twelve money prizes were awarded towards the end of the latter month. On this occasion Babu Raj Kisto Day gained the first money prize and the two other pupils, Babus Uma Charan Sett and Dwarka Nath Gupta, obtained the fifth and ninth prizes respectively. At the final examination held in October and November 1838 these three pupils and Babu Nobin

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\* Dr. H. H. Goodeve in the introductory lecture delivered by him in 1848 made use of the following words:—"A few courageous pupils led by Pundit Modu Sudan Gupta (one of the assistant tutors) ventured under my superintendence with their own hands to dissect a body." The Hon'ble J. E. D. Bethune, the then President of the Council of Education, who was present at this lecture, seems to have been impressed with the belief that Modu Sudan was the first to make incisions in the body, and taking him for a student, caused a portrait of his to be hung up in the large theatre of the college in commemoration of the event. The first Editor of this Journal in his account of the Calcutta Medical College published in the March to September numbers of the year 1873, states that Babus Rajkisto Day, Uma Charan Sett and Dwarka Nath Gupta were three of the four "intelligent" pupils of Mr. Bramley, and that he was informed by the second and third gentlemen named that Rajkisto was the first to plunge the scalpel into the dead human body. After a careful consideration of all the facts and arguments bearing on the question we are inclined to think that as the four students and Pundit Modu Sudan were all eager for dissection, it does not matter much who happened to have first passed the knife through the dead body. The credit of being the first dissectors ought to be shared by them all.

Chunder Mitter, a young man of superior acquirements who subsequently gained a very high reputation as a practitioner, acquitted themselves satisfactorily in anatomy, as well as in the other subjects and were declared qualified to practice the healing art.

In 1845 Dr. H. H. Goodeve, then one of the Professors of the College, took four students (Bholanath Bose, Gopal Chunder Seal, Soorjee Coomar Chuckerbutty, and Dwarka Nath Bose) to England. Their career at the University College, London, was highly creditable to them. Three of these men obtained the M. D. degree, and the first and the third gained medals for extraordinary progress in particular branches of study. Soorjee Coomar stayed in England for a longer time than the others, became a convert to Christianity, married an English lady, and called himself Soorjee Coomar Goodeve Chuckerbutty. On his return to India he was attached to the Calcutta Medical College, and was subsequently appointed Professor of *Materia Medica*. He was succeeded in the post by Dr. Rajender Chander Chander, and both of them acquitted themselves most creditably. On the retirement of the latter, a European Professor was appointed to succeed him, and no Indian has since obtained the post—a course diametrically opposed to the recommendation of Lord William Bentinck's Committee. We take this opportunity to express our best thanks to Sir Edward Baker and to Lords Minto and Morley for the decision that the Professorship of Anatomy in the Medical College, should be given to an Indian Medical officer not belonging to the covenanted service. We think however that the field of selection would have been widened if all the Medical practitioners had been made eligible for the appointment. As the final orders on the subject have not yet been issued we propose to return to the subject in a future issue. The early history of the college seems to indicate that a succession of professors burning with the zeal and enthusiasm of a Bramley, a Goodeve and an O'Shaughnessy, might produce surgeons and physicians fit to occupy places among the celebrated medical men of the world.



## TUBERCULOSIS.

BY DR. SATISH CHANDRA BANERJEE, L.M.S.

*(Continued from page 200.)***Symptoms.**

Cough is one of the earliest symptoms, at first dry and hacking, subsequently it becomes more loose, more constant and associated with a glairy mucopurulent expectoration. The presence of laryngeal complications gives a husky character to the cough and when cavities are formed the cough becomes paroxysmal. In well-established cases the nocturnal paroxysms are most distressing, and prevent sleep.

**Sputum.**

In early stages the sputum is chiefly catarrhal and has a sago like appearance due to the presence of degenerated alveolar cells. This may persist for months and afterwards it becomes viscid and opaque. Then it becomes mucous and then flocculent resembling irregular balls of flock of wool, of a yellow or greyish colour sinking and breaking down in water. These when coughed up are suggestive and as softening goes on, the expectoration becomes more profuse and purulent. Finally, when cavities exist they assume the so-called nummular form, each mass is isolated, flattened, greenish, gray in colour, quite airless and sinks in water and sometimes contain particles of clotted matter like softened cheese; microscopically the presence of tubercle bacilli in the sputum is an infallible indication of the existence of the disease. They are frequently in groups of three or four but the number varies considerably. The sputum may become mixed with small round particles of tubercular matter with pus or with streaks of blood, or well-marked hæmoptysis occurs.

The daily amount of expectoration varies. In rapidly advancing cases with much cough it may reach as high as 500 cc in the day. In cases with large cavities the chief amount is brought in the mornings and has a characteristic sweetish odour; sometimes it is fetid.

### **Haemoptysis.**

The occurrence of haemoptysis is regarded as an indication of the disease. Cases of haemoptysis may be divided into three groups. In the first the bleeding comes on suddenly without premonition, without over-exertion and injury and often there is no family history of tuberculosis. The physical signs are negative, no bacilli are found in the expectoration. Patients of this class may retain good health for years and even may have no further trouble. In a second group individuals in apparently perfect health are suddenly attacked, perhaps after a slight exertion or during some athletic exercise. The physical examination is negative but bacilli are found in the blood sputum more frequently and a few days later.

In a third set of cases the individuals have been in failing health for some time but the symptoms have not been urgent and not roused suspicion of the patient. Physical examination gives signs of the disease and there are tubercular bacilli in the sputum. Haemoptysis occurs in 60 to 80 % of all cases—more frequent in males than in females. In most cases the bleeding recurs. The amount of blood varies from 2 drachms to a pint, more usually  $\frac{1}{2}$  an ounce is brought up.

In haemoptysis occurring early in the disease the bleeding is slight, is apt to recur and fatal hæmorrhage is very rare as in these instances the bleeding is usually from small areas of softening.

In the later stages after cavities are formed the bleeding as a rule is more profuse and is more apt to be fatal, bleeding coming either from an erosion of a good sized vessel or from the rupture of aneurism of the pulmonary artery.

The bleeding as a rule sets in suddenly. It may come with a slight cough. The character of the blood is distinctive. It is frothy mixed with mucus; generally bright red in colour except when large amounts are expectorated and then it may be dark. The sputum may remain blood tinged for days or there may be brownish black streaks in the sputum.

**Pain and Dyspnoea.**

There are shooting pains in the chest or superficial tenderness. The commonest situation is the lower thoracic region, though in some instances it is felt beneath the scapula or referred to apex.

As the disease advances cough and dyspnoea become more urgent, the expectoration more abundant, the emaciation and weakness more considerable and the pulse more frequent. There are chills at noon or in the afternoon.

The face flushes towards evening, the palms of the hand and the soles of the feet are burning hot; in a word, hectic fever sets in followed towards morning by profuse perspiration. The urine is high coloured and deposits a pink sediment. The tongue from being white is now exceptionally clean and red and the appetite often improves. Profuse diarrhoea sometimes tinged with blood, night sweats, extreme emaciation, shedding of the hair, aphthetic ulcers in the mouth or throat, hectic fever in its most marked form and a very feeble, rapid and often irregular pulse precede in the fatal termination. In some cases the patient dies suffocated having escaped many of the most distressing symptoms. In other instances, delirium and other tubercular indications precede the fatal event for weeks. The appetite and spirits often remain good and the patient is of good spirits to the last and flatters himself with the hope of speedy recovery and forms distant projects of interest or amusement.

Now, remembering that tuberculosis is an infectious disease due to a bacillus which may enter the body through the pulmonary system by being inhaled or by the alimentary tract by being swallowed and occasionally through a skin wound, what steps should we take to combat the disease.

Apart from general measures for housing the people and improving sanitation the following measures are now generally recognised and accepted for directly dealing with the spread of the disease in most countries of Europe and America :—

1. Compulsory notification of all cases.
2. Disinfection of houses where cases have occurred.

3. Dissemination of knowledge instructing people to keep a patient as far as possible in a separate well-ventilated room and to use especial receptacles containing some antiseptic solution for the reception of expectoration and the like.

4. The prevention of the expectoration in public places and workshops.

5. The establishment of sanitoriums for the treatment of cases in an early stage when the disease may be curable.

6. The establishment of laboratories and dispensaries in big cities for free examination of sputum and instructing people free.

7. The establishment of homes for advanced cases amongst the poor who have no proper accommodation and thus to remove them from this foci of infection.

Now, the starting point for dealing with all infectious diseases is notification. In no other way can we so thoroughly know where the disease exists or what stage it is in, and unless both these facts are ascertained how can any attempt be made to deal with it from a public health point of view.

So, compulsory notification is to be taken as the first and most essential step, in case the municipalities and the authorities are to go to the expenses of providing sanitary hospitals, laboratories and a special sanitary service to interview the patient and do the needful.

Of course, every precaution should be taken to safeguard the liberty of the patient and to prevent any interference with the confidential relations which should exist between a patient and a medical man. Notification should be made equally compulsory for the head of the family, the lodging-house keeper, and the heads of large establishments.

When by notification we know where the disease is, we should insist on the constitutional treatment of pulmonary phthisis, as we know that pulmonary consumption is mainly spread by infection from a tuberculous patient, the placing of such a person in a hospital or infirmary releases his household from its principal exposure to infection and further by removing worry indirectly improves the health of the family.

Failing compulsory notification and rigid observance of constitutional treatment the medical officer in charge of the patient or the public health officer who would devote a part of his time to trace out cases by careful enquiries should, with much discretion and tact, make arrangements for the isolation of the patient in his own house and shall indicate to the patient and his friends the measures to be taken to prevent contagion and to ensure disinfection and destruction of the sputum, soiled clothes, &c. Systematic efforts should be made to instruct people as to the danger of tuberculosis and how much they can do by carefully disinfecting their expectoration and not indulging in the filthy and dangerous habit of spitting. Everything that tends to educate people as to the danger of tuberculosis such as lectures, distribution of pamphlets, exhibitions especially as to cleanliness, should be encouraged.

Sleeping in a room by themselves and the treatment of sputum will be of great value, the more so, as with the present status of our society, compulsory notification and institutional treatment seem out of the question. Therefore, for a long time to come, we must educate the people more and more as to the importance of keeping their houses clean and sanitary, well-ventilated, not over-crowded and so situated as to be properly lighted by sun. Temperance in all things should be inculcated as well as the use of nourishing and properly cooked foods and the laws of hygiene should be taught in primary schools and workshops which should be medically inspected at regular intervals.

Admitting that the beginning of the health is to know the disease, arrangements should be made that the knowledge of the laws of health becomes part of the professional equipment of all school teachers and whenever possible the instruction in elementary hygiene in training classes should be entrusted to especially qualified men. The result would be that children trained by such school masters would, on reaching mature years, be more intelligently alive to questions concerning the laws of health and would thus be able to diffuse knowledge amongst the

illiterate and particularly inside the 'purdah' by both examples and precepts.

Disinfection is particularly necessary in cases of death and changes of habitation and when persons suffering from phthisis are treated in their own rooms it should be seen that disinfection is carried at frequent intervals by trained persons and measures should be taken, if possible, to prevent expectoration in public places and conveyances. School authorities and employers should put up notices in the schools, factories and workshops, prohibiting spitting at these places. Probably the best means of disinfecting sputum containing sporebearing bacilli is to mix it with a five per cent. solution of carbolic acid but even this requires a contact of 24 hours. Exposure to boiling water for 10 minutes or for half an hour is also effective. The danger of autoinfection cannot thus be obviated. A patient on the way to recovery may be reinfected by his own sputum. If during expectoration some of the sputum should be accidentally drawn into the sound lungs fresh centres of infection may be started. Some may also be swallowed and infect the intestinal canal. The only remedy for this danger is the regular use of antiseptics, internally and by inhalation.

Pillows, handkerchiefs, bed sheets, &c., which have incurred the risk of contamination may be disinfected by boiling water or in 1-20 carbolic solution for hours before they are sent to washerman's house; blankets and mattresses by exposure to steam for an hour or to dry heat for several hours. The use of paper handkerchiefs should be encouraged so that they may be burnt afterwards. Convenient spittoon should be provided for each patient containing a 5 per cent. carbolic solution to disinfect and keep the sputum moist. The contents should be afterwards filled with sawdust saturated with a solution of carbolic acid and be burnt and the vessel itself should be cleansed with boiling water.

Spittoons should be kept always covered lest flies setting upon spittoons should be the means of carrying the infection. The patient if possible should have his own set of utensils, spoon, cup, glass and every thing put to his mouth should regularly be boiled after use. The hair and beard should be worn short and the nails and beard be frequently washed with disinfecting soap.

The walls should be frequently cleansed and scrubbed. The floor should be sprinkled with some antiseptic lotion and the sweepings burnt and the furnitures frequently be wiped with a cloth dampened with some solution. Thorough cleanliness, personal and general, is in short the best protection.

Now regarding public sanitoriums and homes for advanced cases for the poor. We need public sanitoriums within access of large cities in which cases of early tuberculosis can be treated and the patients educated at low rates or at the public cost. Private sanitoriums for the well-to-do classes are also urgently needed. The success achieved in Europe and America where public sanitoriums and homes are being properly maintained demonstrates clearly the great importance of those institutions and value of rigid discipline in carrying out a successful treatment of tuberculosis. Re. home for advanced cases it is all the more necessary for we know that the last three or four weeks of the patient's life are most deadly to the spread of infection and usually at the time the victim after staying for some months in a general hospital and finding himself worse goes home to die. His every cough, sneezes or effort to speech sends forth a spray laden with virulent bacilli deadly to the poor wife and children around him. He comes so to speak to die at home leaving a legacy of tragedy to those he leaves behind and certainly it behoves us to stop this evil and to see that the man may die peacefully in a Home and his last days there be made as pleasant as humanity can make them.

Now the question is whether these sanitoriums and homes would be appreciated by the people. Surely at first the ordinary people would prefer to be treated at their own places and the females of the class where purdah system is rigidly observed would never think of crossing the threshold of their doors but with time some progress may be anticipated and if we can win over the confidence the educated class by employing only first class men in these institutions, men whose scientific ability, kind manner, devotion to duty and integrity can be relied upon, much of the prejudice will pass off in time and a day may come when these places will be thronged by an eager crowd.

Now the direct measures towards the control of pulmonary tuberculosis must be supplemented by indirect measures.

- (1) The unremitting and systematic removal of nuisance.
- (2) Prevention of overcrowding and enforcement of good ventilation. Reconstruction of insanitary houses, and improving the drainage of the soil and the house drains.
- (3) Stringent supervision of meat, of cowsheds, of cleansing of streets and proper disposal of refuse.

But all these measures require an expenditure of vast sums of money but we should bear in mind that Tuberculosis is an economic disease and is a legitimate offspring of modern town life, industry and of civilisation and as such, the modern society is bound to provide means to cut down the ravages of its own being, otherwise a tight purse policy would be avenged badly and its ravages and consequent destitution would go on increasing.

Now lastly regarding infection by meat and milk.

Fortunately Bovine Tuberculosis is not so common in India and the products of the cow are almost invariably sterilised by heat before consumption by our people. With regard to meat, however, cooking is not equally serviceable as the temperature in the interior is not likely to be raised sufficient to destroy the bacilli and as authenticated cases are on record of infection spreading through meat it is essential that every person rich or poor should have a guarantee that all meat used by him has been inspected by carefully trained veterinary inspectors. If all private slaughter houses are abolished and if the elaborate scheme recently drawn up by our learned Health Officer regarding improvement of slaughter houses and improving cattle mart and for exercising rigid supervision, be carried into practice we may hope to be relieved of much anxiety in future.

Now with regard to milk. Considering the reports of the Royal Commission and bearing in mind that the unwholesome surroundings have some influence in the production of tuberculosis, steps should be taken for more systematic inspection by veterinary inspectors of all cattle and cow sheds and that all cows with tuberculous udders should be destroyed and those that



react to the tuberculin test should be branded and isolated and compensation be paid to owners.

Lastly, regarding improvements of cattle sheds. When the new bye-laws that are being circulated, are passed into law and satisfactorily enforced, matters will improve greatly. But the question of milk supply in Calcutta is a complex one as most of the milk comes from rural districts where no control is exercised and it is desirable that some sort of control should be exercised on those dairies whose owners send milk here and the bye-laws and veterinary inspection should also be enforced in these rural areas, if possible.

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## EDITOR'S NOTES.

**Tonsils and the Teeth.**

It perhaps is not necessary to call attention to the fact that carious teeth may be the cause of enlarged tonsils, but infection from this source should always be borne in mind. Enlargement of the glands may take place without infection during the periods in which the molars are erupting. These times vary, of course, somewhat with individuals but roughly, they may be set down as during the second, sixth, twelfth and seventeenth years.—The *North American Journal of Homæopathy*, April, 1910.

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**Prussic acid.**

To prove that prussic acid kills by stopping the living organism, but works no organic destruction, one of the Professors at the Paris university poisoned a dog with prussic acid before the students' eyes. The animal died almost instantly, but immediately afterwards the professor sent an electric shock through the body of the dog, reviving him. Within five seconds the dog opened his eyes, and within seven seconds his heart began to beat again. After two hours the animal ate a hearty meal.—The *Medical Counsellor*, March, 1910.

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**Chloroform—a By-Product.**

More than one industry has been revolutionized by the utilization of what were formerly trade wastes for the turning out of valuable by-products, and sometimes the by-product is more important and more remunerative than the original output of the plant. This is said to be the case in the wood-pulp industry. One large wood-pulp mill has recently expended \$100,000 in the erection of a plant for the conversion of the pulp liquor into saleable products, among which, strange to say, is chloroform, which is made and sold in 200 pound lots.—The *North American Journal of Homæopathy*, April, 1910.

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### The Potencies used by Hahnemann.

Dr. Richard Haehl, who lately visited this country has been engaged for several years in gathering material for a "Life of Hahnemann" to be published in German. Commenting on this work the *Homœopathic Eye, Ear and Throat Journal*, says: "It has been asserted that in the latter part of his life Hahnemann used high potencies predominately if not exclusively. Dr. von. Bönnighausen allowed Dr. Haehl to examine Hahnemann's medicines, and these proved to be in and below the sixth centesimal, with the exception of a few thirtieths—such as *Sulphur*, *Silicea*, *Natrum muriaticum*, etc."—The *Homœopathic Recorder*, May 15, 1910.

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### Pellagra—its cause.

This disease, the study of which was one of the great services to science rendered by our late colleague C. Lombroso, is assuming some importance in the United States, especially in the Southern States. The disease is named from its skin symptoms, but has most important systemic effects as well. Stomatitis with salivation, nausea, vomiting, morning diarrhœa, frequently bloody, are among the common gastrointestinal symptoms. In the mental sphere is found great depression or else maniacal excitement, and confusion of mind and loss of judgment. The skin symptoms are generally found in the extremities. Dryness, roughness with swelling and infiltration along the edges of the rough patches are characteristic. The lesion is generally red, œdematous and scaly. The disease is a grave one, and the prognosis bad. Many cases end in insanity. There seems no doubt that Lombroso's observation of the relation of the disease to infected maize is correct, but is emphatically a disease of poverty and overcrowding; alcoholism and unhygienic conditions generally undoubtedly predispose to it. We should expect our "antipsoric" remedies to furnish potent weapons for cure. The two drugs mentioned in the American Journals, from which we take the foregoing details, are *Arsenicum* and *Natrum Mur.*—The *Homœopathic World*, February 1, 1910.

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### Bismuth Subnitrate.

*Poisoning.*—A woman, aged 42, admitted into hospital with severe gastro-intestinal symptoms, was submitted to a radioscopic examination after the ingestion of 50 grm., of subnitrate of bismuth suspended in bread and milk. After the examination she returned immediately to the ward, and nothing abnormal was noted in her condition. Four hours later, however, she was suddenly seized with vertigo and nausea, then with profound *malaise* with sensation of cold and violent abdominal pains. She was immediately put to bed and was found to be suffering from a severe rigor with trismus and her tint was very strongly cyanotic. In spite of energetic friction and the ingestion of hot liquids the shivering persisted for about two hours. Respiration was rapid, the extremities very cold, the pulse small and much accelerated. This alarming condition persisted until after the passing of several abundant blackish stools. Little by little the rigors ceased, the respiration became more regular and calm, and the pulse recovered its normal rhythm. The cyanosis of the lips and hands persisted longer, and it was only by the next day that the patient had returned to her normal condition. She never had any vomiting, and, in spite of the gravity of the symptoms at times, she never lost consciousness or had any convulsions.—*The North American Journal of Homœopathy*, May 1910.

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### Progress in fighting Tuberculosis.

As an indication of the force of the crusade against tuberculosis, the National Association for the Study and Prevention of Tuberculosis in a bulletin issued to-day points to the fact that while 53.5 per cent., of the expenditures for tuberculosis in 1909 were made from public resources, appropriations made for 1910 indicate that over 75 per cent. of the money to be spent this year will be from federal, State, city and county funds.

In 1909, out of the \$8,180,621.50 spent for the prevention and treatment of tuberculosis \$4,362,750.03 was spent from public money, and \$3,817,871.47 from funds voluntarily contributed. For the carrying on of State, federal and municipal tuberculosis work in 1910, over \$9,000,000 has been appropria-

ted. Of this sum, the State legislatures have granted \$4,100,000, the municipal and county bodies, \$3,975,500 and the federal government, \$1,000,000.

In the States in which the most preventive antituberculosis work has been done, the percentage of public funds spent is the highest, while in States where little or no effort has been made to prevent tuberculosis, and the treatment of the disease alone has been considered the percentage of public expenditures is very low. For instance of the \$1,600,000 spent in New York in 1909, nearly 60 per cent. was from State and city funds. In Massachusetts nearly two thirds was from public money; in Maryland about one-half; and in Pennsylvania three-fourths. In Colorado, on the other hand, less than one per cent. was from public money; in California about 15 per cent., in Arizona none at all. These facts indicate, the National Association declares, that wherever an aggressive educational campaign has been carried on by private organizations, States and cities have been induced to make liberal appropriations for the prevention of tuberculosis.

Twelve years ago, Massachusetts made the first appropriation for a State sanatorium. Since that time, over \$10,000,000 has been appropriated by State legislatures for the prevention of tuberculosis and about an equal sum by municipal and county authorities. The Federal government has over \$1,000,000 invested in tuberculosis hospitals, and spends annually about \$500,000 in their maintenance. Every year the percentage of appropriations made from public funds for tuberculosis work has increased.

While private societies have led the way in the tuberculosis campaign, every effort has been made to have States, cities and counties do their share. The bulletin of the National Association states that the final success of the anti-tuberculosis crusade depends on every city and State providing funds to treat and prevent consumption.—*The North American Journal of Homoeopathy*, May 1910.

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### Modern Women.

Dr. Dudley A. Sargent, Harvard's physical director, says that woman is fast nearing the day when she will approach the capabilities of man, not only in mental powers, but also in physical strength. He says that woman has begun to realize that the sunset road to beauty of face and figure, as well as health of body, lies through the path of physical culture. "Society, with its fads and frills, has gone in for this embracing of muscle and body development, 'style' being responsible for its present popularity," says Sargent. "Outdoor games, such as tennis, golf and horseback riding, have served to make the college and society girl stronger, while her sister of the shops and factories finds recreation and muscle nourishment in the factory gymnasiums and public gymnasiums.—The *Medical Counsellor*, March, 1910.

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### Pellagra—its cause.

For a long time pellagra has been regarded as a food disease, and it has been generally considered to be due to damaged or diseased maize, which forms a staple article of diet among the Lombard peasantry. But further knowledge has shown that pellagra is by no means confined to Lombardy, or to areas where maize is much consumed; it has been identified in all parts of the world, in some of which maize is not eaten at all. It is common in Egypt, in Barbados, and amongst the Zulus and Basutos of South Africa. It has also been met with in Roumania, Gascony, Corfu, and parts of British India. More recently it has been observed to be spreading in the United States, increasing rapidly since 1906, and numerous cases have been reported in as many as thirteen States. This tendency to invade fresh territory reminds one of the sleeping sickness, and another point of similarity is the value of arsenic in its treatment. These considerations have led Dr. Sambon to formulate the hypothesis that the cause of pellagra is protozoal in origin, and this view has received the support of Sir Patrick Manson. The *Times* of February 4, reports the formation of a committee to study the subject, and a highly representative list of names is given, including the Italian Ambassador, Sir Thomas Clifford Allbutt, F.R.S., Sir Lauder Brunton, Sir Patrick Manson, Professor William Osler, Professor Ronald Ross, Dr. Sambon, the Editors of the *Lancet* and the *British Medical Journal*, and others eminent in science.—The *British Homœopathic Review*, March, 1910.

## CLINICAL RECORD.

## Foreign.

## CLINICAL REPORT OF THREE CASES.

By F. H. LUTZE, M. D. BROOKLYN, N. Y.

CASE 1. Miss Gertrude O., aged 20 years, a milliner has suffered from indigestion for two years, and been attended by several physicians but without relief.

After eating she has a fullness and heaviness in the stomach, which extends upward to throat with a dull aching in forehead, causing at times difficult breathing. All this is usually relieved by free eructations of tasteless gas. Again, and this especially after dinner, it will make her cross and irritable, even "ugly" as she expresses it, to any one near her; then she can get relief only by going away from every one and walking along in the open air.

After an hour or two she begins to have free eructations which then give further relief. She is worse in general in the morning and forenoon, also after any substantial meal. She has grown indifferent to her work, in which she used to take very much interest, is very irritable, has a bitter taste, poor appetite, no thirst. At times she can eat a good meal, but invariably suffers for it afterward. The tongue is coated thinly white, with red papillæ and a triangular red tip. Stools at times difficult, sleeps good.

R Antimon. tart 200, cured in less than a week; a slight relapse some months later was permanently cured by Anti. tart. 45m, two powders taken four days apart.

CASE 2. Mrs. C. S., aged 25 years, mother of two girls and in the early stage of her third pregnancy, has nausea and vomiting, worse in the early morning and forenoon, which was promptly cured by Podophyl. 200.

About the third month of her pregnancy the nausea and vomiting returned, occurring now both day and night, worse from any motion, even of turning in bed, relieved by perfect rest; averse to food, drinks much, but not often, and is worse in a warm room, especially if near the stove. With it all she has developed a fine temper, is irritable, quarrelsome, more so in the forenoon.

— Bryonia 200 relieved all for a time, but after a few weeks the irritability returned in a much aggravated form, again always worse in the forenoon. Her husband gave me these symptoms de-

claring he positively could not endure this state of affairs much longer, for she never ceased quarrelling all the forenoon, found fault with everything and everyone, punished the children without any cause often, but always when they were the least bit noisy or even lively; then the face becomes red with anger and she throws anything she happens to have in her hand away or even at him or the children. He has never known her to be like this, and he must have some medicine, if there is any for such a condition. I told him she would probably have no faith in any medicine for that and be too angry and stubborn to take it, did I give it to him. Certainly she would not take it, if she knew, but he could manage that, so she would take it, tell her it was for a cold, or the kidneys or some such thing—then she would take it.

I gave him R: *Staphisagrea* 30, which not only made her as amiable as before but improved her in every respect, and she had the easiest labor of all when giving birth to her third child, a fine and healthy boy.

When told of the artifice some months after the labor, she said, laughing: "I was fully aware that I was unreasonably cross and angry but could not help it, and often wondered what could have produced the change in me for the better, but never thought it was the medicine.

CASE 3. Clara H., æt 3 years, had a severe attack of bronchitis, with rattling of mucus in the chest and trachea, as if a quantity of it must come up with the cough, which often was followed by vomiting, but even then but little was ejected. She was worse lying down, especially the breathing, was drowsy and ill-tempered, would not let me come near her nor even look at her, contrary to her previous disposition, for we had always been great friends.

R. Antimon. tart. 200 improved her so much in a few days that the parents considered her entirely well again, and contrary to my advice dispensed with further treatment.

Yet she apparently remained quite well for several months, until the parents took her out to an entertainment in a country church one stormy winter's evening. She was very sick again the next morning, when I found her in about the same condition and the same symptoms as before, but in a rather aggravated form.

R. Antimon. tart. in various potencies had very little or no effect now, and though she would not allow me to come near her, much less examine, yes, even look at her, and was always irritable in my presence—the rapid breathing, increasing dyspnoea, cyanosis



and prostration certainly indicated pneumonia. The mother said that she coughed but little and it seemed loose rattling. Antimon. tart. having clearly failed to produce any good result: Bell., Chelidonium, Lycopodium, Phos., given on seemingly good symptoms furnished by the mother, also failed to improve her. The perfunctory question asked daily, "Did the bowels move?" was always answered in the affirmative, but on the tenth or eleventh day the mother added to this answer, "But I have to make her!"

When questioned regarding the meaning of this she explained as follows: "Clara will sit on her little chair when I tell her, but she gets up at once, and I have to make her sit, and keep her sitting for a long time before she has a stool." "Then she has no desire for stool?" "No, nor for urine, or food or anything else." "Is she always so irritable as she is when I am here?" Oh, no, not at all, she is very good always; I have no trouble at all with her; she sleeps most of the time."

Here, then, I had to deal with a paralytic form of Pneumonia and I gave her: R Opium 200 in aqua. The following day there was a decided improvement in her condition, which continued under the same remedy and was followed by a complete recovery on the third day thereafter.—The *Medical Advance*, May, 1910.

## CASES FROM SYDNEY.

By DR. H. L. DECK.

### *Hay Fever, etc.*

Miss. O., aged 16.

*February 8th.*—Headache < 10 to 11 A.M. Gone in afternoon. Very hungry in day, sometimes > eating, < from undue excitement.

*Itching* + on arms and legs when undressing.

*Always thirsty*, drinks cold water in between meals.

*Hunger* at 11 A.M., 4 P.M., *very* hungry.

*Warts* many, hard, horny, painless, on fingers, never bleed, flat, cracked.

Vertigo, "fall forwards," with headache; perspiration + in hands in winter.

Catamenia four-weekly, *five days*.

Sneezing, "hay fever" from hot weather; a cold always when near the sea.

Does not like salt ; would leave it out if not stopped ; does not like what an ordinary person has.

*Natr. mur.* 200 one dose. *S. Lac.*

*February 15th.*—A bit better, but not very much.

Nose awfully itchy on outside wings only when she sneezes.

Coryza with hay fever is acrid and fluent.

Sneezing very bad in morning on rising.

Often wakes at night with a contracted up feeling in back of things > if she can have a good stretch.

Sometimes distant objects seemed blurred ; eyes tested and found right.

Adherent brick dust in urine. *Caust.* 200, three doses. *S. Lac.*

*March 7th*—*S. Lac.* Better in every way. No more sneezing or itching. Have since heard that patient goes on well.

#### SYCOSIS.

MR S, age 57.

*October 11th, 1909.* *Breathing difficult for years.* Is an engineer on light work (filing iron) ; phlegm expectorated by night. Emaciation to extent of seven pounds in a few weeks ; faint after slight exertion.

Pain region of kidneys. *Urine* scanty and high coloured, "like strong tea" ; red adherent gravel on standing.

*Cough* hurts him in right lower front chest. Tight in chest with a cold < night before midnight. Breathing deep causes wheezing.

Bowels costive.

Sleep bad.

Examination revealed asthmatic rales.

*Nat. S.* 200, one dose. *S. Lac.*

*March 29th, 1910.* Much relieved by medicine.

Wet weather low spirits ; tight breathing ; commonly wakened up 3 a.m.

Severe cold in head (? working in a draught) and in ear. "Thought he was going to pieces," "so nervous," "starts up in a fright when dozing off," "stopped up sensation" in right ear, "as if wax was there." No more red gravel.

*Nat. Sulph.* 200, one dose. *S. Lac.*

Vaccinated twice : when young ; at twenty-three "did not take."

*April 5th.* "Every symptom gone." *S. Lac.*—*The Homœopathic World*, June 1, 1910.

## CHILBLAINS AND PULSATILLA.

BY DR. W. L. MARRIOTT.

## CASE I.

Miss G. T., aged 27, complained of chilblains of both feet. Both feet were so swollen that she was unable to get her boots on: they were very congested and blue. The irritation was markedly aggravated by heat, but the pain was ameliorated by gentle motion. The patient herself was very much worse in a warm room, and better in the open air.

*Pulsatilla* 10 m., one dose taken at night. Twentyfour hours later she was met walking on the street, and explained that on rising in the morning her feet felt quite well, and the swelling had so much subsided that she was able to get her boots on.

The chilblains disappeared completely and did not trouble again for six weeks in spite of wet feet and cold. A second dose then had a good effect.

## CASE II.

Mrs. A. came complaining of a neuralgia in the teeth of some days' duration. It was always worse in the house and better in open air, worse when she got warm in bed at night.

Incidentally she mentioned having had chilblains on one foot, one of which had broken the skin. She also complained of involuntary fits of weeping which came on in the house but never in the open air, and when she went out they were easier to control.

The toothache was ameliorated by drinking cold water.

*Pulsatilla* 10 m.; one dose.

Seen a few days later, she reported the toothache quite gone.

The chilblains also had quite disappeared, and the place where the skin was broken, which had refused to heal with various ointments, commenced to heal within twenty-four hours, and was nearly well.—The *Homœopathic World*, June 1, 1910.

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## Gleanings from Contemporary Literature.

### INFLUENCE OF TRADES ON DISEASE.

By Mr. C. E. HOFFMAN.

#### INDUSTRIAL HYGIENE DEFINED.

Industrial hygiene has for its object the physical well-being of working people, and its sphere is practically all-inclusive of what comprehends the industrial system. It is only within very recent years that the vast importance of this branch of preventive medicine has been clearly recognized by the medical profession as a practical problem, but the public interest in the subject has been less active in the United States than in England, France, Germany and other countries. In part this backward condition is the result of the rather exceptional and more favourable social condition of American labor, necessitating a lesser degree of drastic State interference than has been found necessary in the older countries of the world. Most of our factories and workshops are of comparatively recent construction and they have, as a rule, been built with a fair regard to modern standards of light, air and ventilation. As the result of the concentration of industry, many of the older factories have gone out of use or have been rebuilt in harmony to more modern requirements. The better wages, the shorter hours, and the higher standard of living of American labor have also very largely contributed to bring about a better physical condition of wage-earners than is met with in European countries.

#### RELATION OF HEALTH TO ECONOMIC CONDITIONS.

It is a readily observed fact of general experience that however intimate the connection of occupational activity may be to resulting injury to health and life, the problem is enormously complicated by other causes and conditions affecting the general physical well-being of the people. Where wages are comparatively high, better food can be furnished, better housing can be secured, more rest and recreation can be had, and in the event of illness better medical attendance, than where the opposite economic conditions prevail. Hence the injurious effects of certain industrial conditions are less serious among a people economically in a superior position than among wage-earners who work for lower wages, long hours, and under conditions of life otherwise of an inferior order.

#### UNSATISFACTORY HYGIENIC CONDITIONS IN THE U.S.

Considerations like these explain in part why industrial hygiene should not have attracted the widespread interest of the medical profession of the United States which the subject has attracted in European and other countries, but there can be no question of doubt that, broadly speaking, the conditions of industry inimical to wage-earners' health never have been, and are not now, as serious in the United States as in the older countries

of Europe. This favorable position is, however, only comparative, and the conditions as such in many occupations are far from satisfactory.

#### RELATION OF HYGIENE TO INDUSTRIAL GROWTH.

The increasing proportion of population engaged in industry also emphasizes the growing importance of this subject. Even during the short period of five years ending with 1905 the proportion of persons employed in manufacturing establishments has increased sixteen per cent. But the sphere of industrial hygiene is not limited to manufacturing industries for it includes every employment followed by men, women and children from the earliest years of life to its very close. It includes persons of every degree of physical condition from those in perfect physical health to the physically impaired, defective and deformed. Many occupations which can be followed without injury to health and life by the physically perfect, cannot be followed without detrimental results by the physically weak, or by women, children, or the aged.

#### PRINCIPLES OF OCCUPATIONAL SELECTION.

With rare exceptions occupation selection proceeds without a proper regard to physical ability to perform the duties required and in many employments are persons wholly unsuited to the mechanical tasks which they have to perform. In the case of women and children this law of physical adaptability receives recognition in modern laws regulating the employment, but even in this respect there is still a vast amount of maladjustment. It would not seem to require an extended argument to prove that small children are wholly unsuited to certain kinds of physical activity and that under no circumstances should such children be exposed to the continuous and considerable inhalation of industrial dust. It would also seem to require no argument to prove that women must not be employed at work beyond their physical strength, or at night, or underground, but only during very recent years has legal sanction been given to humanitarian considerations which forbid the employment of women and children in unsuitable pursuits. But the fact cannot be gainsaid that the proportion of women in industry is rapidly increasing and that they follow a large number of employments to which, because of their sex, they are not properly adapted and which, therefore, require statutory regulation, at least as to hours of labor, and the statutory prohibition, of night work and work underground.

#### WOMEN AND CHILDREN IN INDUSTRY.

The United States, in the social condition of women and children, is immeasurably in advance of European countries, where of bitter necessity they are often employed at arduous or unhealthy occupations at which they have rarely, or never, been employed in this country. Women, with us, have never been employed in mines, nor at heavy work in potteries, nor at unloading of vessels, or similar unsuitable tasks. Our respect for women revolts at the thought of even the remote possibility that they may perform manual work as a necessary result for an independent

struggle for existence. Children have been exploited to a very considerable extent in all countries, but happily indeed, the modern conscience is awakening to social responsibility in this matter and a recognition of the incontrovertible truth that the children are in fact the most valuable asset of the nation. At the same time, in the case of both women and children the economic condition of the nation is not such that they can be entirely relieved from their respective share in participating in the industrial processes by which the life of the community is carried on, and even the wealthiest of nations in modern times can not relieve a large proportion of its women and children from the necessity of active work at tasks suitable to their sex and strength.

#### CONSERVATION OF HEALTH AND STRENGTH.

The conservation of health and strength is a national problem of far-reaching importance and particularly so in the case of industrial nations which are actively engaged in the struggle for international commercial supremacy. Industrial efficiency is fostered and advanced by the best possible condition suitable to health and life and by a most rigid obedience to the principles of rational industrial hygiene. Every adult male worker represents a valuable national asset which can not be destroyed without more or less serious injury to the national economy. A considerable amount of capital has been sunk in the production of factory workers or wage-earners of all kinds, partly by parental care, partly by State solicitude in the form of education and otherwise, so that at the age of commencing work a life, broadly speaking, has its highest potential economic value, because so much money, effort and care has been spent in its production and little or nothing as yet has been returned. For the State to realize a proper return on the human investment, every year of subsequent lifetime is of the greatest possible economic importance, and to industry itself that value increases in exact proportion to labor experience gained. Nothing can be more shallow or intrinsically absurd than the argument that one man is as good as another, or that a life lost can easily be replaced, for under modern conditions resulting from the minute subdivision of labor the average workman of mature years is decidedly superior to a new man who requires, first, to be trained to adapt him to his work.

#### ETHICAL CONSIDERATIONS OF INDUSTRIAL HYGIENE.

Aside from this purely economic consideration there are, of course, ethical and humanitarian considerations which demand that the most that the State can do shall not be left undone to secure to wage-earners not only equality of opportunity, but also the best possible conditions favorable to sound health and long life. Whatever may be said with regard to the reckless and needless waste of our natural resources applies with more than double force to the criminal and inhuman waste of our human resources as made evident in a high adult death rate from industrial diseases, and in particular from a high mortality from consumption in dusty trades, and the frequency of lead or other mineral poisoning among

persons in certain occupations, or, finally, in the lamentable and disgraceful frequency of industrial accidents. The waste of these lives imposes a tremendous burden upon the nation which, though unseen and not calculable in dollars and cents, is nevertheless a very material hindrance to our real progress towards the ideal of a really happy, prosperous and intelligent nation. The sorrow which is brought into thousands of homes as the result of the bread-winner's premature death; the dependence of women and children as the result of impaired efficiency and premature incapacity for work is so great a burden upon the nation that if it could be even approximately calculated it would stagger the dullest imagination and demand change and relief for an aroused conscience of mankind.

#### THE PHYSICAL ECONOMY OF THE HUMAN MACHINE.

It is, therefore, not without economic and ethical justification that all modern civilized nations have deliberately undertaken the improvement of the conditions under which industrial activity is carried on and the gradual but certain removal of conditions decidedly inimical to the health of the working people. Since the effects of most of these conditions are generally slow in their operation and most insidious in the manner in which health and strength are gradually undermined, the human machine in its imperfect working is neglected, while the mechanical machine receives abundant care and is further perfected with remarkable ingenuity in minute detail. But the wear and tear on the human machine is much more pronounced and serious than in the case of the mechanical machine, since the former is a vastly more complicated and delicate organism than the latter. In the former the parts or the organs which are worn out or injured cannot be taken out or replaced by new organs or parts, as is the case in the mechanical machine, but they are lost for ever and human life is correspondingly shortened and terminated at an age often many years before its natural or normal end.

#### CONSUMPTION AS AN INDUSTRIAL DISEASE.

There can be no doubt, however, that mortality has diminished and that there has been a decrease in morbidity, but both mortality and morbidity, among certain classes of wage-earners, are still decidedly above the average, and of no disease is this more true than of consumption. Every trade in which there is exposure to the continuous and considerable inhalation of dust should be made a matter of government concern, so that the factors and conditions inimical to health and life may be reduced to a minimum. At present this is not the case in hardly a single one of the numerous employments in which the death rate from tubercular or respiratory diseases is above the average, and only a beginning has been made in calling public attention to the facts. Little though hope can be held out for success in the humane effort to diminish the ravages of tubercular diseases until the evil is attacked in its origin, and preventive measures are generally adopted to effectively protect the health of women and children in industrial pursuits. Only a few illustrations are

necessary to emphasize the impressive and far-reaching truth of this assertion.

#### CONSUMPTION FREQUENCY IN DUSTY TRADES.

Among men employed in occupations with exposure to metallic dust at ages 15-24 the porportion of deaths from consumption is 45.5 per cent., at ages 25-34 it is 57.2 per cent., at ages 35-44 it is 45.2 per cent., and at ages 45-54 it is 23.4 per cent. Somewhat similar, though not quite so serious, are the facts regarding men employed in occupations with exposure to mineral dust, which at ages 15-24 causes a mortality from consumption of 31.7 per cent., at ages 25-34 of 47.6 per cent., at 35-44 of 36.8 per cent., and at ages 45-54 of 27.9 per cent. The facts for certain particular occupations are still more serious and alarming. Considering only grinders, that proportion of deaths from consumption at ages 25-34 is 70.8 per cent. against 31.1 per cent. for men in all occupations. That percentage itself is decidedly too high, the excess resulting naturally from the large proportion of persons employed in occupations with a mortality from consumption above the average. Thus among farmers and planters, according to the census mortality statistics for 1908, the percentage of deaths from consumption at ages 25-34 years was only 25.6 per cent. against 35.9 per cent. for draymen and hackmen, 41.2 per cent for tailors, 42.9 per cent. for plumbers and 49.2 per cent for compositors, printers and pressmen.

#### THE FIELD OF INDUSTRIAL MEDICINE.

Facts like these, which can not be gainsaid, and which are incontrovertible since they are sustained by every qualified investigation into the vital statistics of different trades, emphasize the duty of government and private enterprises to leave nothing undone to reduce the disease liability to the minimum. In particular, however, do these facts emphasize the duty of the medical profession to specialize in the field of industrial medicine and to follow European examples by perfecting the study of disease predisposition in recognized unhealthful trades. While much can be done by preventive medicine, there must always remain a large field for the specialist in occupational diseases who shall select for his field recognized unhealthful trades or recognize ill-health producing factor seriously affecting the different parts of the human organism to the decided detriment of the body as a whole.

#### ENGLISH AUTHORITIES ON INDUSTRIAL DISEASES.

As yet this field is practically neglected in the United States. No qualified and comprehensive treatise on occupational diseases has been written by an American authority, and the fragmentary contributions only emphasize the deplorable neglect of one of the most promising fields in modern medicine. The really valuable literature on occupational diseases is almost entirely foreign and, foremost among the works in English which are deserving of painstaking study are the contributions by the late Dr. Arlidge and the more recent works by Sir Thomas Oliver. While these two writers have taken the whole domain of industrial



medicine for their respective fields, there is a numerous body of faithful workers who have specialized in particular fields. I may mention among others the researches with regard to arsenic, by Dr. Malcolm Morris ; the effect of employment in ganister crushing, by Hamilton P. Smith ; the effect of steel grinding, by Sinclair White ; the dangers in the use of mercury and its salts, by Dr. T. M. Legge ; the effects of employment in the manufacture and handling of copper and brass, by Dr. R. M. Simon ; the disease liability in the manufacture of high explosives, by Dr. R. P. White ; the dangers of employment in chemical trades, by A. P. Laurie, M.A. ; the dangers of working in jute, by Harry J. Wilson ; the employment in laundries, by Lucy A. E. Deane ; the danger of flax and linen manufacture, by Dr. Purdon ; the hygiene of cotton manufacture, by James Wheatley ; and many similar researches, most of which have been brought together in a single volume under the title "Dangerous Trades," by Sir Thomas Oliver, who himself has contributed many valuable special articles, in particular on the disease liability in match manufacture, and the dangers of working in lead and its various compounds.

#### GERMAN AUTHORITIES ON INDUSTRIAL DISEASES.

Even more numerous and valuable, however, are the contributions by German authorities on occupational mortality, largely resulting from the duty imposed upon German industry being opposed by the government insurance system. The most authoritative treatise on the subject is a handbook on the diseases of working men, edited by Dr. Theodore Weyl, who himself has made many and highly specialized inquiries into particular trade diseases. In this work the diseases of miners are discussed by Dr. Lindemann ; the disease of working men in lead, silver, zinc and quicksilver, by Dr. Laureck ; the diseases of workers in iron, by Dr. Roepke ; the diseases of metal workers, by Dr. Zadek ; the diseases of chemical workers, by Dr. Weyl ; the diseases of rubber workers, by the same author ; the diseases of gas workers, by Dr. Schnette ; the diseases of silver workers, by Dr. Silberteiu ; the diseases of potters, by Dr. Holitscher ; and many others too numerous to be included in this summary.

#### AMERICAN WRITERS ON OCCUPATIONAL MORTALITY.

These are but a few fragmentary references to the vast literature of occupational diseases, which includes but a very few American writers of recognized authority. The most valuable American contribution, partly antiquated but still of considerable value, having been printed in 1895, in *The Twentieth Century Practice of Medicine*, is the contribution by Dr. James Hendrie Lloyd, of Philadelphia, who emphasises in particular the importance of industrial poisonings, but he includes observations on the effects of dust, tobacco, compressed air, bad sanitation and ventilation, etc. Of course there are others, but their writings are chiefly compilations of foreign data and only a beginning has been made in original research.

## IMPORTANCE OF ORIGINAL RESEARCH.

I mention these few to indicate the importance of the subject and to emphasize the vast, though as yet hardly recognized, possibilities of qualified research in the field of industrial medicine in the United States. In exact proportion as the evil becomes recognized will remedial measures be demanded and the recognition of the evil and its relation to the community at large must necessarily come through the medical profession, qualified to establish the facts with at least approximate accuracy for the practical needs of the present time.

## NECESSITY OF MEDICAL FACTORY INSPECTION.

The first step in the direction of a deliberate and rational policy of industrial hygiene is the appointment of qualified medical factory inspectors in conformity to the English and continental practice of the present day. Only by qualified medical supervision of factories can the conditions productive of disease be brought to light and can remedial measures be proposed, which in the end will do away with conditions decidedly and unquestionably detrimental to the health and life of wage-earners at the present time. Only through such supervision can the experience be gained, which in its nature must extend over many years to prove with unerring accuracy the true incidence of disease-causing conditions, which are, as a rule, extremely slow in their effects on the human organism and which ordinarily escape attention. The facts of most importance are, therefore, rarely made a matter of official record. Only by such medical supervision will death certification be gradually improved so that the actual occupation of the diseased, as well as the true cause of death, shall be recorded, and if the facts warrant it, brought to public attention. Under the present method of death certification there is no question of doubt that some of the most important facts bearing upon problems of industrial hygiene are not made a matter of official record, since in the classification of deaths preference is of necessity given to the immediate rather than the remote cause of death. This, for illustration, explains why we have so few recorded deaths from fibroidphthisis, which is a true occupational disease, or from lead-poisoning, which is often the remote cause of deaths recorded as kidney, liver and other diseases.

## PRACTICAL RESULTS OF MEDICAL FACTORY INSPECTION.

Medical supervision of factories would be productive of substantial good in other and even more important directions in that qualified medical advice would suggest remedial measures for the improvement of ventilation, better light and air conditions, the effective removal of industrial dust, and the mitigation of evils arising out of the presence of noxious fumes, vapors, etc. All these matters are extremely complex in their interrelation and they involve perplexing problems to the employer as well as to the State. Manifestly State interference with industry must proceed upon extremely cautious lines so that the industrial activity itself is not seriously hindered, since its abrogation would be an even greater calamity

than premature disease and death to some of the workers themselves. At the same time, however, in the light of vast experience, the truth can not be denied that very considerable improvements are possible without much cost or hindrance to industry itself. In fact most of the evidence which is available proves conclusively that the benefits resulting to industry from the introduction of methods or conditions improving the health under which such industries are carried on, have far more than repaid the original expense of installation by a larger unit product of the persons employed. While this conclusion can not always be substantiated it is nevertheless a valid inference that workmen in the best of health must be better producers than those in inferior health, of weak constitution, and diminished physical strength. This is so self-evident a conclusion that it requires not to be sustained by statements or other proofs.

#### PROBLEM OF INDUSTRIAL HYGIENE.

It would carry me entirely too far to discuss all the elements of the problem, but I at least may enumerate the most important. Among the detrimental conditions of industry which require medical supervision and medical inquiry are the effects of excessive labor, chiefly on the part of women and children, and of young persons apprenticed to employments possibly beyond their physical strength. The principle has been established for at least some employments that a medical examination must determine the fitness for the occupation to be followed, and this principle in time may be extended to all employments, including re-examination from time to time to determine whether the employment has been followed by injurious consequences sufficiently serious to demand a radical change.

#### MEDICAL SUPERVISION OF OCCUPATIONAL ACTIVITY.

The time may come, and I trust that it will come, when working men will voluntarily submit to such re-examination on the part of such qualified experts in industrial medicine, so that a word of caution at the proper time may be the means of saving valuable years of life for the benefit of the individual and the community as a whole. Such an examination or re-examination would suggest the importance of a change of occupation in many cases where men now follow one particularly unhealthy trade for the most of the years of their active lifetime. It may come about that men will realize that the more dangerous employments should not be followed by anyone for a lifetime, or at least not successively for any particular length of time. Employments which are serious only when continuously followed for a long time may be found to be comparatively harmless when followed for only comparatively short periods. It should be found practicable with men in such employments to shift from the most dangerous to the least dangerous, and vice versa, to reduce the evil effects of exposure to industrial dust or to industrial poisons, to the minimum. If an effective method of medical supervision of factory conditions and the health of factory workers produced no results other than these, the system would fully justify itself.

## EFFECTS OF OVERSTRAIN.

Other detrimental conditions to health in industry include physical and mental over-strain, excessively repeated muscular action, and bodily fatigue, which is made manifest in the higher degree of accident frequency in the afternoon than during the morning hours of work. Over-strain, or over-lifting of heavy burdens is not done away with even where machinery is extensively used and cases of hernia are still distressingly frequent, but the extent of internal injury is not a matter of official record. Among boiler makers and riveters, as the result of the general use of automatic riveting machines, we meet with serious consequences resulting from the effects of concussion of the air, but the actual extent to which workmen of this class are affected is not at present a matter of record. The modern development of tunnel and underground construction has largely increased the number of workmen exposed to the dangers of compressed air, corresponding in part to the well-known risks attending the occupation of divers, who as much as any class of men are exposed to conditions detrimental to health. These are but brief illustrations of the dangers which surround the modern workman and which have resulted in quite different diseases and accident risks in industry from the corresponding risks and conditions of an earlier date. Over most of these conditions the workman himself has but a very slight degree of actual control, and while a decided improvement is possible by the intelligent co-operation of master and workman, the fact remains that the consequences to health and life fall upon the employe alone.

## EXPOSURE TO GASES, VAPORS AND HIGH TEMPERATURES.

Every occupation, however, furnishes a field of profitable medical inquiry, for practically endless are the ramifications of modern industry and the manner in which industrial operations re-act upon the health and lifetime of the workman. Of no employments is this probably more true than of the large group of workers exposed to gases, vapors, high temperature, etc. While much has been written regarding the liability of underground miners to accidents from explosion, very little indeed is known with accuracy regarding the health-injurious consequences of underground work, the serious effects of coal dust inhalation and of gases and noxious vapors of all kinds met with in the different branches of coal and metal mining. Practically nothing is known with accuracy regarding the health-injurious consequences of employment in the numerous chemical trades, and our present information is limited almost entirely to English, German and other continental sources. The subject, however, is certain to attract more attention in the future, with the increasing development of the mining, smelting and the chemical industries in the United States.

## EXPOSURE TO METALLIC POISONS.

The effect of metallic poison, dust and fumes, is another large subject of inquiry, where more progress has been made, chiefly because of the

frequency of lead poisoning in potteries, white lead works melters, etc. While the disastrous effects of smelter fumes on the surrounding vegetation are well-known and have led to much costly litigation and drastic State interference with industry, the corresponding effects of fumes and vapors generated during the different kinds of smelting processes on the human organism are but at best imperfectly understood. The actual degree of frequency of lead-poisoning in the manufacture of pottery, cut-glass, etc., is not a matter of official record, but it is in every way desirable that the United States should follow the example of England and the continental nations, to require notification of all case of industrial poisoning, at least of those occurring in large establishments. It is even more difficult to trace the frequency of lead poisoning in the case of painters, who, as a rule, follow individual pursuits, but there can be no question of doubt that the insidious effects of such poisoning are much more common among painters, typefounders, and others exposed to its dangers, than is generally assumed. Among similar occupations with exposure to metallic poisoning mention may be made of brass founders, who suffer from a distinct occupational disease known as "Brass Founders' Ague," but the frequency of this malady in this country is unknown.

#### VALUE OF PREVENTIVE MEASURES.

In all of these occupations there is the imperative necessity of personal cleanliness on the part of the workmen, and of well-ventilated workshops, with adequate facilities for the escape of fumes and the effective removal of industrial dust. As pointed out by Sir Thomas Oliver, in all such employments hot and cold water should be provided for the men to wash in and the workshops themselves should be thoroughly cleaned at least once a year. The workmen should be provided with milk as a prophylactic as well as curative agent against the various kinds of industrial poisoning to which they are continuously exposed. The use of respirators may no doubt very often be inconvenient, but it should nevertheless be insisted upon as perhaps the most effective safeguard against the introduction of noxious vapors, fumes, gases, and the inhalation of injurious dust.

#### NEED OF MEDICAL FACTORY SUPERVISION.

The very complexity of the subject precludes its adequate consideration by the layman, but the mere outline of general industrial conditions injurious to health and life re-emphasizes the necessity of medical supervision of factories and the medical examination and re-examination of workmen employed in dangerous pursuits. Every trade from the indoor or sedentary occupations to the out-door life of the farmer and the hunter's guide, present peculiar occupational dangers which have their medical as well as social aspect, demanding the practical interest of all who are interested in the well-being of their fellow men. Any single occupation selected for the purpose of illustration would perhaps more

clearly bring out the salient factors which demand consideration, but no occupation presents dangers and conditions which are exactly typical of the whole. Perhaps the most serious consequence to health is in industrial dust, and if anywhere State interference is warranted it is in the intelligent regulation of industrial processes giving rise to dust inimical to health.

#### STATE REGULATION OF DANGEROUS TRADES.

Every trade, however, requires separate and distinct consideration, and the rules and regulations adopted by foreign governments for industrial disease prevention vary accordingly since they arise out of the conditions themselves under which industry is carried on. The elaborate rules adopted by German industrial accident associations for the prevention of injuries, and the corresponding rules adopted by sickness associations for the prevention of industrial diseases, are deserving of careful study as perhaps the most effective measures designed to protect the health of men and women employed in industry. The corresponding Home Office regulations of the British Government include numerous injurious occupations such as bi-chromate works, brass mixing and casting, chemical works, earthenware and china manufacture, enamelling of iron plates, electrical accumulator works, explosive works in which dinitro-benzol is used, flax spinning and weaving, red white and yellow lead works, lead smelting works, lucifer match factories, paint and color works, extraction of arsenic, skin and hide sorting, tinning and enamelling of iron ware, vulcanizing of india rubber, wool sorting and combing, etc. The German regulations include sugar refineries, cigar factories, brush-making works and horse-hair spinning, leather press printing works, wire-drawing mills, etc.

#### COMPENSATION FOR INDUSTRIAL DISEASES.

All of these regulations are based upon painstaking inquiry into the actual conditions under which industry is carried on and they have been carefully designed to cause the least possible interference with necessary industrial process and at minimum expense. They are the results of a humane policy of labor protection but they also have minimized employers' liability for workmen's compensation on account of industrial diseases. While under the English law of 1906 the term industrial disease has as yet a very limited significance, it is certain to be enlarged in the course of time under the authority given to the Secretary of State to bring diseases clearly the result of industrial activity within the meaning of the Act.

#### A STATE POLICY OF LABOR PROTECTION.

The progress which has been made in this policy of labor protection will not stop at its present stage, but will continue until every detail has been perfected and every industry brought within the scope of effective factory supervision and control. The annual reports of the factory inspectors of the United Kingdom are models of their kind, to which we have nothing to correspond in the United States at the present time.

The medical inspection reports on industrial condition and the elaborate inquiries which have been made under medical supervision into industrial processes injurious to health, are of such a self-evident practical value that corresponding methods of inquiry, in course of time, are bound to be adopted over here. Our system of factory inspection has no doubt been productive of much good, but only a small beginning has been made to secure the best possible result. Not until factory inspection is made partly a medical function, and not until factory workers engaged in decidedly health-injurious employments are subject to medical supervision, will there be a decided improvement in the health of our workmen, which is as much a State duty as the protection of women and children in industrial pursuits.

#### THE DUTY OF REASONABLE SAFETY PRECAUTIONS.

It is no doubt a difficult task to establish positively and clearly the direct causes of ill-health in industry, and of premature invalidity or incapacity to work, but the evidence is entirely sufficient to warrant the conclusion that to a large extent the health of our wage-earners is undermined by working conditions which are subject to a material improvement. We know as a matter of fact, that the most important cause of invalidity or incapacity to work, or in other words, of physical impairment, is tuberculosis of the lungs, and the large group of respiratory diseases which, among others, shorten the lives of potters, glass-workers, stone-cutters, etc. We know that next to these a most important factor is muscular rheumatism, followed by diseases of the heart and the circulatory system. We know that in many industrial processes eye-strain is a serious factor, impairing not only the visual function but causing nervous, digestive and other serious bodily disturbances as the result of occupational activity. Many employments are also the direct cause of digestive disturbances, chiefly, of course, where metallic poisons in the form of dust, fumes, vapors, etc., are inhaled into the system or introduced into it otherwise by personal uncleanness or indifference, but all such afflictions are the direct consequence of industrial activity, which can be safeguarded against only by stringent rules and the intelligent co-operation of workman and master in the use of all reasonable safety precautions.

#### MORTALITY RATES IN HEALTHFUL AND UNHEALTHFUL TRADES.

The ultimate social economic value of deliberate and rational measures for the prevention of industrial diseases, and the resulting impairment in industrial efficiency and wage-earning capacity would be enormous. Briefly, by way of illustration, the difference in the mortality rate of workmen employed under comparatively healthful conditions and of men exposed to unhealthful conditions, are sufficient to account for not less than one-third of the average adult death rate at the present time. For illustration, at ages 25-34 the death rate of farmers and agricultural labourers, according to English statistics (for there are no corresponding

data for the United States) is 3.96 per 1,000, for printers the corresponding rate is 6.45, and for cotton workers it is 5.48; at ages 55-64 the death rate for farmers and agricultural laborers is 20.25, for printers 30.76, and for cotton workers 41.15. These illustrations can be multiplied in the case of a large number of more or less unhealthful trades, but they sustain the conclusion that the field for industrial hygiene is indeed one of the most promising of far-reaching consequences of all the various endeavors at social amelioration at the present time.

#### THE RATE OF SICKNESS IN GERMAN INDUSTRY.

What is true of mortality is even more true of sickness, but unfortunately our data are less satisfactory and the true facts can only be determined by a qualified and thorough inquiry into the whole subject of industrial diseases. According to German statistics, at ages 20-29 out of every 100 male wage-earners 29 were incapacitated on account of sickness during the course of a single year; at ages 30-39 the rate was 35 per cent., increasing to 40 per cent. at ages 40-49, and to 48 per cent. at ages 50-59. For wage-earning women the sickness rates were 31 per cent. at ages 20-29, 36 per cent. at ages 30-39, 33 per cent. at ages 40-49, and 40 per cent. at ages 50-59. Naturally, on account of the larger number at work the data for male wage-earners are more conclusive.

#### THE RATE OF SICKNESS IN AUSTRIAN INDUSTRY.

For Austria corresponding data show that the percentage of sickness was 42.3 at ages 15-20, 43.6 at 21-30, 47.4 at 31-40, 52.6 at 41-50, and 58.8 at 51-60. The range of sickness, however, for the different occupations varied from the comparative sickness figure of 46 in the case of clerks, and 56 in the case of tailors, to 170 in the case of men employed in chemical works, and 183 in the case of men employed in smelting and reduction works. Among women the most unhealthful occupations were employment in the manufacture of matches, clay and pottery works and tobacco works.

#### THE DUTY OF THE STATE IN THE FIELD OF INDUSTRIAL HYGIENE.

The duty of government in the vast field of industrial hygiene is, therefore, no longer an academic question but a problem in practical politics of the greatest importance. Wage-earners are rightfully entitled to the best possible conditions under which productive industry can be carried on, and as much so to the voluntary or compulsory introduction of all reasonable methods and means by which the conditions inimical to life and health in industry can be reduced to the minimum. Factory legislation, to be thoroughly effective, must, however, be based upon a thorough knowledge of the actual conditions under which industry is carried on, while every protective measure must be framed to enlist the hearty co-operation of employees to make the same thoroughly effective. To be productive of the best results all factory legislation which has for its object the conservation of health and life in industry



must be based upon sound medical considerations to bring the particular provisions of the law into harmony with the most advanced and thoroughly qualified and medical judgment of the day. Other governments throughout the world have utilized expert medical opinion in matters of this kind, and it is of the utmost importance that all future legislation in this country bearing upon questions of health and life should be based upon thoroughly qualified medical opinion.

#### THE FUTURE OF INDUSTRIAL MEDICINE.

Medicine as a healing art is no longer the sole function of the medical profession but the vast domain of preventive medicine offers immense opportunities for useful and remunerative work of medical men of ability who may specialize in this field of useful research and beneficial employment. In this direction there lies the most promising future of the medical specialist trained in the science and art of industrial hygiene. Whatever contributes to the raising of the physical wellbeing of the race is not only a humane duty but the most practical aid towards the ideal of attaining the highest degree of individual and social efficiency on the part of the millions of toiling men and women who make up the best and the most that constitutes the mass of mankind.—*The North American Journal of Homoeopathy*, April, 1910.

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THE  
CALCUTTA JOURNAL  
OF  
MEDICINE

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Vol. xxix.]      July 1910.      .      . [No. 7.

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THE FIRST OVARIOTOMY.

On December 9, 1909, there was held in Cincinnati a centenary celebration of an epoch in the history of surgery—the performance for the first time of an operation for ovariectomy. The event that was thus commemorated took place in Danville, Kentucky, where Ephraim McDowell, the man who thus immortalized himself, had located to practise medicine fourteen years before, soon after his return from his studies at Edinburgh University.

Early in his professional career Dr. McDowell attained a reputation as a surgeon, the leading surgeon west of the Alleghany Mountains, and it is said he often undertook journeys of sixty or a hundred miles on horseback under conditions, owing to the primitive conditions then prevailing in that part of the country, which are almost inconceivable to-day. He is credited with having operated many times for strangulated hernia, he was the first surgeon in the United States to resect the lower jaw, and to excise the parotid gland. The first Caesarian section performed in this country has also been credited to him; and he was particularly successful in the surgical treatment of stone in the bladder, performing not less than 22 lithotomies without a death.

Dr. McDowell did not rush into print; his report was not published until 1817, by which time two other successful



ovariotomies could be counted to his credit. His report was as follows :

"In December, 1809, I was called to see Mrs. Crawford, who had for several months thought herself pregnant. She was affected with pains similar to labor pains from which she could find no relief. So strong was the presumption of pregnancy, that two physicians, who were consulted on the case, requested my aid in delivering her. The abdomen was considerably enlarged, and had the appearance of pregnancy, though the inclination of the tumor was to one side, admitting of an easy removal to the other. Upon examination per vaginam, I found nothing in the uterus, which induced the conclusion that it must be an enlarged ovarium. Having never seen so large a substance extracted, nor heard of an attempt or success attending any operation such as this required, I gave to the unhappy woman information of her dangerous situation. She seemed willing to undergo an experiment, which I promised to perform if she would come to Danville (the town where I live), a distance of sixty miles from her place of residence. This appeared almost impracticable by any, even the most favorable, conveyance, though she performed the journey in a few days on horse-back. With the assistance of my nephew and colleague, James McDowell, M.D., I commenced the operation which was concluded as follows : Having placed her on a table of the ordinary height, on her back, and removed all her dressing which might in any way impede the operation, I made an incision about three inches from the musculus rectus abdominis on the left side, continuing the same nine inches in length, parallel with the fibers of the above-named muscle, extending into the cavity of the abdomen, the parietes of which were a good deal contused, which we ascribed to the resting of the tumor on the horn of the saddle during her journey. The tumor then appeared full in view, but was so large that we could not take it away entire. We put a strong ligature around the Fallopian tube near the uterus, and then cut open the tumor, which was the ovarium and fimbriated part

of the Fallopian tube very much enlarged. We took out fifteen pounds of a dirty, gelatinous-looking substance, after which we cut through the Fallopian tube and extracted the sac, which weighed seven and a half. As soon as the external opening was made, the intestines rushed out upon the table, and so completely was the abdomen filled by the tumor that they could not be replaced during the operation, which was terminated in about twenty-five minutes. We then turned her upon her left side, so as to permit the blood to escape, after which we closed the external opening with the interrupted suture, leaving out at the lower end of the incision the ligature which surrounded the Fallopian tube. Between every two stitches we put a strip of adhesive plaster, which, by keeping the parts in contact, hastened the healing of the incision. We then applied the usual dressings, put her to bed, and prescribed a strict observance of antiphlogistic regimen. In five days I visited her, and, much to my astonishment, found her engaged in making up her bed. I gave her particular cautions for the future and in twenty-five days she returned home, as she came, in good health, which she continues to enjoy."

At the time of the operation the patient was forty-seven years old, and survived it thirty-two years.

Certainly this is an event worth chronicling and worth commemorating. It must be borne in mind that the operation was performed in Dr. McDowell's office without the assistance of trained nurses and all the paraphernalia of the operating room of to-day. Presumably the operator had learned the importance of reasonable cleanliness, but asepsis and antisepsis were yet unborn, and anesthetics were not available until a third of a century later.

It was a daring performance. Leading surgeons in Europe had suggested that the best way to treat diseased ovaries might be to remove them; but none had the courage to attempt it. McDowell undertook the operation against the advice and despite the protests of his professional friends; and the people of the community were greatly wrought up over the matter. It is

said that if he had failed and the woman had forfeited her life, he would have been the victim of mob law. Had he escaped this fate, he would have fallen into the hands of the coroner, whose jury, backed by the medical profession throughout the world, would have brought in a verdict of wilful murder.

Dr. McDowell was a deeply religious man. Sunday was his favorite day for operation, because he really believed that "the better the day, the better the deed." The special prayer he composed and read before he started on the famous operation is still in existence. It must have been his strong faith in the direction of the Unseen, and his consciousness of the purity of his purpose, which, assisted by his wide surgical experience and his anatomical knowledge, enabled him to successfully pass through such a critical and eventful experience. Although the march of time has caused the famous house and operating room to be tenanted nowadays by negroes, Danville has commemorated its famous citizen by dedicating to his memory a public park, in which is a granite shaft bearing his medallion. But womankind is universal and McDowell's name should be held in remembrance by grateful women, grateful husbands, and grateful children everywhere. Would it not be appropriate to have an Ephraim McDowell ward in hospitals throughout the world?—*The North American Journal of Homœopathy*, April, 1910.

## CASES ILLUSTRATING THE HOMŒOPATHIC PHILOSOPHY.

BY JOHN WEIR, M.B., CH.B., GLASG.

*Assistant Physician to the London Homœopathic Hospital.*

THIS case is brought forward by kind permission of Dr. Goldsbrough, under whose care he was admitted to the hospital. Dr. Goldsbrough asked me to prescribe, after having selected drug by use of repertory.

E. P., aged 67, had been a painter since 14 years of age; is moderate in alcohol, now non-smoker. Small-pox at 18. Had ague at 24, no recurrence. Contracted syphilis at 20; treated twelve months by a local doctor (allopath). No secondary

manifestations. Lead colic when 40; no paralysis. Attending National Hospital Dispensary for a long time for tabes, no improvement.

*Present Condition, April 23, 1909.*—*Face*: Thin, pale, very anxious, worried expression, almost fear.

Chief complaints were: (1) Dull aching pain left side of body to hip, and also down left arm; (2) shooting pains on left side—sudden onset and gradually going away, down left arm and from left hip to left foot. > when cold, or if exposed at night, so that he had to wear long gloves; > hot application. (3) Excessive tenderness left wrist; < touch, yet > hard pressure. *Mental*: Very irritable, impatient, obstinate, passionate, which < pains; extremely restless, never seemed able to settle. *Head*: Occipital pain, < pressure. *Eyes*: Arcus senilis present, vision fairly good, pupils do not respond to either light or accommodation, diplopia at distance, no nystagmus. *Hearing, taste, and smell* all good. *Sensory*: Hyperæsthesia from chest down to both legs, left side more marked; pain exaggerated, no delay to sensation. Temperature; response to cold quicker than heat, heat delayed outside both legs; burning sensation both shoulders, left side chest and left arm; no girdle sensation. *Motor*: Walk jerky, slightly ataxic, Romberg's sign somewhat present; fair power in limbs. *Reflexes*: Superficial present, deep, lost entirely at ankle and knee. *Sphincters*: Good control. *Digestive*: Appetite good; good deal flatulence; bowels very constipated, has had lead colic, stool small, hard balls with mucus at times. *Urine*: Perfect control, but no force. *Generals*: < change weather; winter, cold, wet weather; is very chilly (own words were. "Would be comfortable if had clothes up to neck and my head out of window"); least exertion, > open air; gentle motion; warm room, yet desired fresh air; restlessness.

#### *Selection of Remedy.*

Chilly      , Kent, p.

(Lack vital heat) ... 1328    63 drugs.

< Cold wet weather    1312    30 drugs in previous list.

Desire open air ... 1306 *ant.c., ars., bar.c., carb, s., CARB.V., graph., lach., LYC. SULPH.*

> Warm room ... ARS.

Here in four generals by exclusion we come to ars.

Suppose we take third list and work particulars into this.

Restlessness ... 72 ARS. CARB. S. *graph. lach. SULPH.*

Irritability ... 57 *ars. CARB. S. GRAPH. lach. SULPH.*

< Uncovering ... 1368 ARS. — *graph. lach. —*

Burning pain ... 1339 ARS. CARB. S. *graph. lach. SULPH.*

Shooting (stitching)

pain, thigh ... 1118 ARS. carb. s. *graph. lach. sulph.*

< Cold ... 1023 ARS.

> Warmth ... 1025 ARS. — *graph. — sulph.*

> Press ... 1024 *ars.*

Sensitive to pain ... 1358 *ars. — graph. LACH. sulph.*

We see here the particulars all markedly fitting to the generals.

*Subsequent Progress.*—April 28. Ars. 1,000, one dose; sac. lac., nocte.

May 1. Marked < burning and shooting pains shoulders and left leg; slept better; bowels moved own accord; constipated stool.

May 2. Buring pain entirely gone. The shooting pains have only been at ankles and left wrist; sleep good; bowels even acting three times a day, but still constipated stool. Hyperæsthesia of body disappeared, except at left wrist.

May 4. Little shooting pain left arm; sleep well; eating better; flatulence gone.

May 7. No burning or shooting pains for two days; complains only little aching left arm; occipital headache, once prominent, has gone; admits feeling greatly improved in every way—which is admission for him, as he always looks on pessimistic side of everything. Bowels acting daily, though still constipated.

May 8 to 21. Much same condition; walking better, feeling stronger; only slight twinges of pain some days.

May 22. Discharged to-day. Given arsenic 1,000, one dose and sac. lac.

May 25. Reported himself at out-patients' department; had some return of the burning pain at left wrist.

The interest in this case is the selection of the remedy by considering the "generals" of the patient alone. The patient must be first, the disease second. This is especially, and almost essentially so in chronic cases, and often thus you get your case down to two or three remedies, or possibly one, as in this case. If there be but one remedy that has the numerous generals, covering them absolutely, in degree as well as frequency, that remedy will cure the case. There may appear a few particulars to contraindicate, but no particular can throw out even one well-marked general. For instance, a case may present many particulars which look like arsenic yet if "the patient" be aggravated by heat it can never cure.

Usually, however, you have only sufficient generals to bring you to, say six remedies, and here the particular and peculiar symptoms, again indicating the patient, come in, and from them some distinguishing feature is obtained which points more strongly to one remedy.

Often our best cures have been obtained by a remedy, chosen solely by generals, which was not known to possess any striking resemblance to the common symptoms of the disease, doubtless due to want of further proving.

How often do we find that we cure symptoms whose existence was unknown to us, and the patient coming back and asking if the medicine were intended to cure polypus of nose, or, as in a lady I had recently, a leucorrhœa of twenty-five years' duration. She thought she had mentioned the fact.

William Harding, 39 (old hospital case, by kind permission of Dr. Epps). Blind since 1897 after meningitis. On *general and mental symptoms alone* I prescribed his remedy.

September 20, 1909. Puls. 10M, one dose sac. lac. daily.

October 29. Puls. 10M, one dose, sac. lac. daily. Since then,

till date, no drug, and *still improving*, even to selecting colours in last two weeks.

The case calls for no change of remedy—*so hands off*.

Began to get sight back four weeks after first dose; can now read large print, tell colours, and play cards; still improving.

I hope some day to report more on the case, but it illustrates the value of treating the patient.

The results will surprise any who try, and by "the fruits shall ye know them."

In chronic disease treat the patient. This cannot be emphasized enough. "We know the saying, "Take care of the pence and the pounds will take care of themselves." In homœopathy, "take care of the generals and the particulars *must* take care of themselves."

He also showed the disappearance of symptoms from above downwards, the pains leaving rest of body but persisting in wrists and ankles, then eventually going. This is always a good indication of cure, because going in a definite order. It is really a working of the trouble to the periphery, again from within outwards.

I once gave 10M bryonia (single dose) to an allopathic scoffer for rheumatism in the knees. In four hours he could hardly bear the dreadful aggravation, and he then felt the pain suddenly leaving the knees, and shoot down legs as if going out at his toes, entirely disappearing the following day.

But lastly, and much the most important, it illustrates the single remedy in potency, in single dose.

It is a matter of almost every-day experience to prescribe a drug in potency which the patient has been taking some time for years for some chronic complaints without much benefit, and for the potentized drug to succeed where the other failed.

Many who now use potentized drugs to 30th or 200th still keep repeating daily, and they acknowledge that their patients express feeling better at first, but soon lapsing into same old way—in reality worse by far, because they are having implanted

in their system a drug disease, a thing to be more dreaded than original trouble.

In chronic cases you must give your drug time to work. It will most likely bring back old, or indeed new, symptoms, upon which the next remedy should be based. Because a remedy is the right one to-day, that does not necessarily mean that it will suit next time, and the second prescription should, as in the first, be based on the totality of the symptoms then existing. There is no other guide to it.

More cases are spoiled by too early repetition than by any other mistake. Prescribe in haste, and repent at leisure. It requires far more knowledge and confidence to know when to keep your hands off than to lay them on. Hasten slowly is a good motto, and never more so than when using potentized drugs.

*Case 2.*—A. E., engineer, aged 74. Well built, apparently healthy; complaining of excessive flatulence and distension of abdomen for last ten years, with great rumbling in upper part of abdomen, especially about 4 to 7 p.m., and always waking him from sleep at 4 a.m. Usually gets > by excessive escape of flatus, otherwise much pain. Causes great discomfort, as escape is audible.

*Stomach.*—Appetite good, but heaviness for hours after food, with very great distension; no special desires or aversions in food, though likes the taste of salt, and < pastry.

*Rectum.*—Bowels act fairly regularly, sometimes ineffectual urging to stool, or only small hard balls, with straining; bleeding from small hæmorrhoids; itching of anus excessive when constipated, < heat of bed, preventing sleep.

*Head.*—Throbbing headache, begin occiput and work over head to left eye; < stooping, < motion, must keep absolutely still; < lying, want to keep head erect; > warmth, as usual, shivering accompanies them; > pressure, > darkness. Excessive sweat, streaming, on least exertion.

*Throat.*—Tickling cough when chilled or in draught.



**Urine.**—Brickdust sediment very often, and especially before itching anus.

**Mental.**—None special; very punctual; like things done in hurry.

**Generals.**—No marked increase from either hot or cold; stand both, though preferred warmth; great desire for open air and exercise; < change weather; < stimulants. This is a general as "personal," and not any particular aggravation. Sweating on least exertion, especially head, which > him generally.

There are no very marked symptoms, general or mental, except the < stimulant and sweating so profusely; but the particulars are very striking, so markedly that the < 4 to 8 p.m. becomes a general, and must rank high. This, together with the flatulence, and especially the > from passing of flatus, also the brick-red dust deposit in urine, makes one think of lycopodium with nat. mur. close behind.

January 10, 1910. Lycop. 10M (Skinner), one dose.

January 12. Itching anus, without the usual constipation.

January 13. Flatulence so excessive as to give great pain; this continued for two days, and the patient, not knowing what drug had been prescribed, said, "I should have taken lycop. for this." He is a very intelligent lay homœopath, and had been taking lycop. 3x on and off for years at intervals.

January 19. Return of headaches, very severe; lasted two days.

January 23. Began to have rheumatic pains in left leg, which kept him awake for three nights—so severe that he wired to know if he might take rhus or bryonia. He was advised to keep his hands off, as the pain would likely pass off in a few days. He very wisely did. Had similar rheumatic pains in same leg twelve years ago, but had been perfectly free in the interval.

January 25. Left wrist suddenly became very sore and weak; could not hold anything, nor yet bear weight of arm resting. He experienced this same feeling twenty years ago, then due to a bad twist. Had to give up work for two years. It was

massaged and rubbed with every kind of liniment then known. This very sore for the time, but > 27th.

So here we have a man, not exposed to any risk or conditions which usually bring on his complaints, and indeed having forgotten of their existence, being suddenly attacked with a return of old troubles in a very definite order, the more recent appearing before what happened years ago, and all reappearing in the "reverse order of their coming," which is the proper order, if the drug is true homœopathic similimum, and is a good prognostic sign. Again, this returning of symptoms shows the drug to be still acting, and must, therefore, not be repeated.

This is his first experience of high potency, in which he had no faith, but he declares it has fairly shaken him up, and made him feel better generally than he has done for twenty years.

The following are the direction of symptoms during cure :  
(1) From within-outwards, *i.e.*, from the deeper or more vital parts to the more superficial. Hence the > first in the loves or hates before the more gross symptoms.

(2) From above-downwards.

(3) In the reverse order of their appearing.

Kent writes, p. 31, Philosophy : "You would naturally expect, if it is the interior of man that is disordered in sickness, and not his tissues primarily, that the interior must first be turned into order and the exterior last. The first of man is his voluntary, and the second of man is his understanding, the last of man is his outermost ; from his centre to circumference ; that is *from above downwards from within outwards*, from the more important to less important organs, from the head to the hands and feet. Every homœopathic practitioner who understands the art of healing knows that symptoms which go off in these directions remain away permanently. Moreover, he knows that symptoms which disappear *in the reverse order of their coming* are removed permanently. It is thus he knows that the patient did not merely get well in spite of the treatment, but that he was cured by the action of the remedy, because if the disease were allowed to run its course, such a result

would not take place. The progression of chronic diseases is from the surface to the centre."

These facts can be verified almost daily on your patients. In fact, I invariably warn them of its possible occurrence when taking on a new case, and tell them that in proportion as the old symptoms are thrown back upon the surface so is their recovery. Complaints of the inner parts, heart and chest, must in recovery be accompanied by manifestations upon the surface, in the extremities.

Take a case of rheumatism of heart getting better—often accompanied by the knees or feet becoming rheumatic, and they feel annoyed. And if the doctor does not know or appreciate what is taking place he prescribes for the superficial manifestations, only to drive it back again into the system, with disastrous results.

This explanation to the patients is only their due—it saves much worry to both patient and doctor. How often do we find those who want immediate relief despite the explanation, and it takes all the grit and confidence of the medical attendant to withstand the appeal; but we are standing for principles, and the man who yields does so to the hurt of his integrity and his success—because out of apparent chaos order quickly comes, and he earns the confidence and respect of the patient for having borne them through a critical period. On the other hand, you may lose your patient. I lost two new ones last week because they were not prepared to have return of old trouble brought to the surface. They will try other means, and when that fails I expect to see them back. If they want to be cured they must face it.

I mentioned at beginning that he was apparently healthy or strong. This is important as a guide to the potency. As he remarked to me afterwards, "What would have happened to me if I had not had a fair constitution to withstand it all?"—a very pertinent question. It is here where physical examination and a knowledge of pathology are absolutely essential. Where deep tissue changes are present, *e.g.*, old

phthisical condition of lung, kidneys, or liver destroyed, we must be careful, as such aggravation often cannot be recovered from. Many such have been prematurely sent to their graves, and where tissue changes are known, it is better to go low—to say 200th, than risk a 10m.

It seems strange that a patient should express themselves as feeling very well indeed without any marked diminution in symptoms, but the innermost part is telling that change is going on. "I don't know why it is, but I do feel better." You have got the right drug—keep hands off, and soon the symptoms will go. You are clearing your house in proper order—get the source clear, and what springs from it must of necessity be pure.—*The Journal of the British Homœopathic Society*, April, 1910.

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## EDITOR'S NOTES.

**The Effect of Tuberculosis on the Heart.**

Dr. F. M. Pottenger in a reprint concludes that a relatively low blood pressure will be found in tuberculosis due to weakening of the heart muscle. This is often compensated in old cases by hypertrophy of the heart muscle and thickening of the walls of the systemic arteries. Myocarditis is common in advanced tuberculosis though it will yield to treatment if recognized in time. In most advanced cases the heart is displaced and working at a disadvantage, but it is hard to diagnose these conditions as the adventitious sounds are changed by infiltrations, cavities, emphysemas and contractions, while it is difficult to estimate the size of the heart as it is pushed backward as well as to the left, hence the lateral diameter will not give an adequate idea of its true size.—*The North American Journal of Homœopathy*, May, 1910.

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**Germs Carried in Clothing.**

Lieutenant Shackleton, who came so near to reaching the South Pole, in a lecture before the Middlesex Hospital Medical School, said that the members of the expedition never caught cold until they opened a bale of clothing that had been packed in England. The germs thus introduced caused the members who remained indoors after putting on the clothes to suffer from colds, while those who went into the open air did not. *The Post Graduate*, in reporting this incident, says that this corroborates the observation of others, and gives the instance of two hunters who suffered from influenza before starting on an expedition and although they had apparently recovered, gave the disease to nearly all the white men at a Hudson Bay post that they visited a long distance away, while many of the Indian traders who called were also afflicted.—*The North American Journal of Homœopathy*, June, 1910.

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**Pituitary Extract in Shock.**

Dr. W. Blair Bell, in the *British Medical Journal* maintains that pituitary extract is superior to adrenalin in shock. Bell's experimental experiences with rabbits and his clinical observations on the use of pituitary extract in man, lead him to the peculiar conclusion that while the drug has apparently little or no clinical effect when used in normal conditions, it has a surprising potency

in raising blood-pressure in such subjects as are already in a condition of shock from profuse hemorrhage or vasomotor paresis. Bell also observed that the effects of pituitary extract are not evanescent, as are those of adrenalin, but that their potency continues for several hours, thus enabling the system to readjust itself from the vasomotor breakdown. Salines must be relied upon particularly in shock from hemorrhage, to provide a sufficient circulating medium, and to maintain the vasomotor improvement secured by the use of the pituitary extract. The average adult dose is 1 c. c. of the extract, previously sterilized by boiling, and given intramuscularly by hypodermic injection, to prevent local ischemia from vaso-constriction of the peripheral circulation. The drug is effective with almost the rapidity of nitroglycerine, and while its potency extends over several hours, the dose may be repeated in an hour, if necessary.—*The North American Journal of Homœopathy*, May, 1910.

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### Cures While You Wait.

One of the difficulties that every physician has to contend with is the impatience of the patient to be well. The history of the case will often show that the status præsens is but the culmination of quite a long period of self-neglect, if not of self-abuse (in its natural and broad, and not in its restricted sense). But a cure must be effected "while you wait." If a mere "suppression of symptoms" is to be considered a satisfactory handling of the case, quick results may be forthcoming. But the man educated in the theory and practice of homœopathy knows that, in many chronic cases, several weeks may be consumed in stemming the tide and getting a fair start on the road to health. The conscientious physician hesitates to continue his services for the patient unduly, but the old adage holds also in medicine—that a job worth doing, is worth doing well. A little explanation beforehand will usually head off misunderstandings later. Call the attention of the patient to the gradual onset of the present condition and explain that time must be given for its thorough eradication. And the doctor, too, must have patience. Let him give his remedies time to act, and not change about from one to the other. Also, let him remember that the scraping away of adenoids, the amputation of tonsils, the lopping off of piles may very likely be a removal of an effect and not of a cause. Also, again, don't be too friendly with the surgeon.—*The North American Journal of Homœopathy*, May, 1910.

### Who Discovered Anæsthetics.

Victor Robinson, treating of the discovery of anæsthetics, writes.

"Thomas Middleton, in his *Women Beware Women*, wrote.

I'll imitate the pities of old surgeons.

To this lost limb, who ere they show their art.

Cast one asleep, then cut the diseased part.

Still another Elizabethan poet—the youth who flung away his genius in a tavern as carelessly as a fisherboy casts a pebble in the sea—makes Barabas in the *Jew of Malta* say :

I drank of poppy and cold mandrake juice,

And "being asleep, belike they thought me dead,

And threw me o'er the walls.

But we can go much farther back. In the thirteenth century mandragora was extensively used as an anæsthetic by Hugo de Lucca, and a full thousand years before this time Dr. Hoa-tho anæsthetized his patients during surgical operations. Dioscorides and Pliny wrote of anæsthetics."—*The Homœopathic Recorder*, May 15, 1910.

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### Advice of an Experienced Physician.

An exchange (*Critic and Guide*) prints the following sardonic advice from Dr. La Mettrie, physician to Frederik the Great :

"Distrust your professional brother—*medicus medicum odit*. If you are in a fix lay the responsibility on the backs of the consultants. Never try an active remedy on a person of high position ; it is better that a great lord should yield to human destiny, even prematurely, than that the doctor should be compromised. In the case of consultations try to arrive on the scene a quarter of an hour before the others, in order that you may see the patient alone and gain his confidence, while seeming to study his disease. Visit the patient during the time the remedy is displaying its effects ; make some small change in the mode of administration ; thus you will supplant not only one or two brother practitioners, but the whole Faculty. Take care to stand well with the surgeons and pay court to the apothecaries. Do not give medicines to those who do not like them. In the case of the others order only drugs that are anodyne, well known, and have not a bad taste. Do not pay too many visits ; this would gain for you the reputation of being eager for fees. Always have the air of being busy. If you

are asked out to dinner, arrive late and look as if you had been hurrying, and arrange that you shall be sent for at dessert. If women discuss the causes of a disease, do not contradict them but agree with them. If women advertise you, your fortune is made. Above all do not despise the support of ladies' maids and nurses."—*The Homœopathic Recorder*, May 15, 1910.

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### Kleptomania.

H. L. Northrop, M.D., in the *New England Medical Gazette*, says that Kleptomania is common; the world is full of thieves. A desire to acquire is natural to everyone. Kleptomania implies a lack of control over this instinct, a morbid state of mind with an absence of controlling motives. This instinct to acquire is conspicuous in the animal, which, unless trained, lacks control over it. In man the intellect and the will exercise more or less supervision over the love of possession. Gall, a world-wide authority on phrenology, observed that men given to stealing present a very prominent anterior temporal region, while Gall, Hollander and others, reported many cases of kleptomania in all of which a pathological lesion involving the anterior part of the temporal lobe on one or the other, but usually the left side, existed, and was demonstrated either ante or postmortem. This tempero-sphenoidal lesion and kleptomania appeared to bear so direct relationship that Hollander concluded that "the tempero-sphenoidal lobes are in some way connected with propensities common to man and the lower animals," while kleptomania, hunger and thirst are faculties associated with the anterior part of these tempero-sphenoidal lobes. Dr. Northrop then reports a case of a girl of thirteen, who was backward in development and with a pronounced tendency to kleptomania. He advised surgical measures, and upon shaving the head preparatory to operating, a perceptible fulness was observed above and in front of the left ear. Upon opening the skull a very irregular temporal fossa was exposed, with a deep indention at the tempero-sphenoidal fissure. The depressed portion of bone over the anterior extremity of the temporal lobe, was removed and an unusually large amount of cerebro-spinal fluid was allowed to escape. The wound healed perfectly and although at the very first there seemed to be a tendency toward her old kleptomaniac tricks, after a few days the tendency disappeared and now, ten months after the operation, she seems perfectly cured.—*The North American Journal of Homœopathy*, June, 1910.



### Deaths Under Anesthesia.

Owing to the rapidly increasing number of deaths from anesthesia a committee appointed by the English Government is investigating the matter. In 1866 there were five deaths reported from this cause and in 1908 there were two hundred and thirty-five reported, and these did not represent the total by any means. At present there is no law regulating administration of anesthetics; any can do it. A law regulating the matter seems to be needed, for anesthetics in the hands of an amateur are dangerous.—The *Homœopathic Recorder*, June 15, 1910.

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### Crowding Out the Doctor.

For good or for evil the general doctor is being slowly shouldered out of things. The microbe of a disease is discovered; its "catching" nature proved, or assumed; laws are passed, placards appear, and the official doctor very quietly has taken charge of another class of cases. The wiseacres of the daily press herald this as a thing that is "for the good of the body politic." They do not seem to see that the whole movement is a reflection on the competency of the general practitioner, and an ousting of him from his own field. Just in the ratio that a disease becomes "alarming," just in that ratio does the general practitioner lose it, when he is most needed by the people.—The *Homœopathic Recorder*, June 15, 1910.

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### One Ill Doth Succeed Another.

The authorities, according to a Berlin letter, have ordered the investigation of the Bavarian army to determine whether it, or the soldiers, are not carriers of the germs of cerebrospinal meningitis. Out of 2,763 examined 52 were found to be "carriers" of the disease. The letter states "the germs of this disease settle on the mucous membrane of the throat and may remain there for many months, even more than a year," without producing the disease. This being the case, it looks as if the obvious course of medical science is to now study the disease itself irrespective of these alleged germs. There are typhoid carriers, cerebrospinal meningitis carriers, and carriers, most likely, of the germs of all other germ diseases, who remain in an apparent state of health, so it would seem that the germ in reality is a very small part of the disease and not its primal cause.—The *Homœopathic Recorder*, June 15, 1910.

### Oxygen Deficiency and Blood Production.

E. Kuhn and W. Aldenhoven (Deutsch. Mediz. Wochenschr., Nov. 11, 1909) consider that a lack of oxygen is a potent stimulus for the production of blood; and that the action of arsenic and other tonics is the result of a deficiency in oxygen, entailed by the destruction of the blood corpuscles by these drugs. Animal experimentation confirms the assumption that the reduced oxygen tension of the tissues is of decisive importance for the production of new blood, and that this applies to all measures which are known to act by increasing blood production. Primary lack of oxygen is the simplest and most effectual means of increasing blood production, as evidenced in the influence of altitude and of the suction mask which restricts the amount of air inhaled while permitting free respiration.—*The Medical Times*, June, 1910.

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### The New Title.

Once they were termed "allopaths," later "regulars," but now the term that seems to be favored is "organized medicine;" being but one branch of medicine, they reluctantly realize that there must be a distinguishing name. The president of the Texas "organization" has been telling of all the things done down there. He says, among many other things: Never have the 'schools' of medicine, the quacks and the medical bunco steerers had so many things to worry about." Also: "Height standards of requirements are eliminating the low-grade medical schools and putting out of business the 'isms' and 'pathies' in medicine." It looks as if "organized medicine" is determined to have the "business." Curing? Oh, you know it isn't scientific to use that term any more; nature cures while "organized medicine" looks after the rest, such as putting down "quacks," shouldering out the non-union doctors and collecting the fees. It is a pity this estimable organization cannot realize that in medicine it cannot have a monopoly; that if it cannot draw patients by merit it cannot get them by drastic laws. The cry of "protecting the public" is a telling one from a purely business point of view, but ethically it is fallacious, as statistics have ever proved.—*The Homœopathic Recorder*, July 15, 1910.

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### Separate State Licenses.

Why should we have separate examinations and licenses throughout the United States? It is a loose confederacy system rather than that of a nation. Any one who has succeeded in securing a license in an Eastern State (as I have in one) will know that he has had a hard time. To very many it would be an impossible feat to scale this gigantic Chinese wall, so severe are the requirements. An ex-president of our national society, who has had to represent a railroad enterprise in several States, says his cheapest license cost him \$70.35, and that to get one in all the States would cost \$3,220—a reversal of the old system of bleeding—bleeding the doctors instead of the patients—and for the benefit of other state medicine place-holding doctors.

If a man is a good blacksmith in Indiana he can be one in New York, but if a doctor in Indiana the chances are that he couldn't be more than a poor blacksmith in New York, Pennsylvania, Massachusetts, California and many other States.

The claim that such a law, such an instrument of oppression, "protects the public" is a fraud. It is the home doctors and the State medicine place-holding doctors that are protected, while all others are restricted. One says, "*I am fit, and you are not!*" It is a slam on the medical colleges, too, notwithstanding the high educational standard now in vogue, that their diplomas "cut no ice" (except for "influential" reasons), and that of graduates from the same class in college some are doctors and some—nothing, or cross-road doctors for life.

At the present time our school has but one consulting representative (Dr. Cowperthwaite) in the great Cook County Hospital, Chicago; and rigid or "exclusive" have the "examinations" been made recently that no one has the temerity to attempt to run the gauntlet.—*The Homœopathic Recorder*, July 15, 1910.

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### Suicide and Intermarriage.

The Mendel Journal, the organ of the Mendel Society, instances a case of the development of suicidal mania through four or five generations: Two families lived in the same village; one of these was by tradition addicted to suicide by drowning, the other by shooting. Five generations were traced back, but the actual records of the first generation were not kept. In the second generation one individual drowned himself; and in the shooting family one com-

mitted suicide in this way. Of that generation a member of the shooting family married one of the drowning family ; of the issue of which marriage one person committed suicide by shooting and another by drowning. There were two normal members of the two families, who married, making what is called a cousin marriage. Of the offspring of this "cousin marriage"—being the fourth generation in order—one was insane, with suicidal mania, and is still living: two brothers drowned themselves, a fourth poisoned himself, a fifth shot himself, a sixth poisoned himself, a seventh was insane with suicidal mania ; and three other normal members of the family still live. The suicidal mania persisted in other branches of the "shooting family" ; and in one of these branches in the third generation there was a member who shot himself ; his son also died the same way ; a third was insane, with suicidal mania ; two sisters were normal, but in the next and present generation all the offsprings have had suicidal mania. Thus would appear disastrous consequences of intermarriage where suicidal taint exists ; as also the necessity for imposing some restraint. We should consider that in these melancholy circumstances the psychic element of suggestion, the knowledge that forbears were prone to suicide, would in itself have instilled this tendency.—The *Medical Times*, June, 1910.

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### Pain Relieved by Manual Therapy.

Dr. E. C. Thompson (Bost. Medical and Surgical Jour., April 7, 1910) finds that in many cases the beneficial results obtained by manual therapy far exceed those obtained by other forms of treatment. Thus in sprains and fractures, the dull aching pain can often be relieved and many hours of comfort given. In spite of what has been written by others, the author has found this form of treatment most useful in acute multiple arthritis. Beginning above the joint with careful manipulation, pain and swelling will soon subside. The value of this method can easily be demonstrated by taking the knee and ankle of one limb for treatment, while the other similarly affected is treated by the orthodox methods. In non-purulent gonorrhoeal arthritis, massage is also most useful. Myalgia and lumbago will very often require no other form of treatment if massage is commenced from the start of the disease. The pain in neuritis, sciatica and in many of the neuralgias will receive great benefit from massage, but cases will be found that will resist even this form of treatment, when some disorder of the muscular or

vascular system will usually be found. The manipulations vary with each individual case according to the position and kind of pain and to the functional disability incurred. The chief work falls on the thumb and finger tips, the palmar surface of the fingers, and the thenar and hypothenar eminences. The movements (always concentric) vary from the lightest effleurage to the most thorough petrissage and tapotement followed frequently by active, passive, assistive, and resistive movements, or various combinations. The manipulations should not cause pain, but should relieve it, and should not be rough. The physiological facts evolved from massage are increased elimination, vascularity, and metabolism; absorption of infiltrations and exudations; improved nutrition; relief of congestion and sedative effect on nervous system. In addition to these, adhesions are attenuated, stretched, and sometimes broken down.—The *Medical Times*, June 1910.

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### A Journey Through the Air from a Medical Standpoint.

Recent achievements in the science of aero-travelling have given a decided stimulus to the idea that general locomotion through the air is within sight. It certainly seems that difficulties are rapidly being surmounted, but still the risks are very great; the weather must be favourable for one thing, and then there must be no hitch in the motor engine. After all, no air-trip as yet can be started with the same certainty as a trip by land or by sea. The method of progression is under fair control, but stability under all conditions is not yet amongst the triumphs won. Supposing, however, that it was, the fact has then to be realised that a trip through the air will involve a good deal of nerve. The giddy height will have to be faced, the sudden swoop down or rise upwards with their disagreeable effects for a great many people will have to be reckoned with. Sea-sickness is a terror to many people, and the chances are that air-sickness will be worse. Most persons again have experienced the unpleasant feeling in a lift when it commences its descent or in a swing when, like the pendulum, it swings back. Not a few people refuse to stand close to the edge of a cliff or to trust themselves to look down into a vast chasm of space immediately beneath their feet owing to vague feelings of giddiness, fears of falling arising out of sense of a jeopardised equilibrium. And yet these same people converse glibly about the nearness of the day when aero-traffic will be an accomplished fact, and point in support of their view to the

enormously rapid advances which motor traffic in the streets has made. When the question is carefully considered in detail it will be conceded that there is hardly anything that is comparable between the air motor and the land motor from the point of view of attaining practical success. The problem in the case of the former is so complicated by the first requirement—the conquest of that great force which do what we will, pulls us back again to earth the moment we dare to rise from its surface. No special motor appliance is required to keep afloat on the sea or to keep a stable position on land, but we can only gain support in the air by means of moving machinery analogous to the wings of a bird or by utilising a buoy or a substance which is much lighter than air, and which, therefore, tends to float upon it. The machinery in the former case must obviously be well-nigh perfect and incapable of breaking down, while the difficulty in the latter case is the enormous bulk of floating gas that must be used. In short, the advances yet to be made in order to bring aviation within the practical affairs of daily life must still be very far-reaching. Then, assuming the great consummation has been reached, will the human organisation be able to stand aviation? This is by no means certain, having regard to the constant changes of atmospheric pressure—with their marked effects upon the respiratory and circulatory processes—which a journey through the air must entail.—*The Lancet*, June 11, 1910.

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### Population.

The numbers of the human race steadily increase, in spite of falling birth rates in some countries and in some races; and it would be difficult to say if the birth rate of the world showed any variations from generation to generation. It is certain that the populations of indigenous mammals are subject to great fluctuations. Mr. Ernest Thompson Seton has lately called attention to the wide extent of these fluctuations in the indigenous mammals of the Canadian North-West, such as shrews, musk rats, lynxes, and wolves; and the Hudson's Bay Company's records of their fur returns for the last 150 years exhibit such fluctuations in a most remarkable way. In respect of furs, as in respect of feathers, it might be thought that the demands of fashion exercised some influence on the number of skins collected; but fluctuations are not confined to fur-bearing animals. Professor Vernon Bailey has called attention to the vast increases in the number of small

mammals, such as field mice. In 1907 and 1908 they increased to such an extent as to do enormous damage to the American wheat crop—and as suddenly diminished in numbers. Insects, of course, ever since Egypt's plague of flies, have been recognisably subject to sudden and alarming increases—especially in the instances of locusts, crickets and cicadas. In 1891 and 1892 a sudden increase in the number of the pine beetle culminated in the destruction of a large part of the pine and spruce timber over 75,000 square miles of Pennsylvania, Maryland, and Virginia. The extreme cold of the winter of 1892-93 stopped the plague. There is a well-marked periodicity also in the numbers of fishes, especially in the instances of sardines and salmon. In the Fraser River of British Columbia there is a big increase of "sock-eye salmon" every fourth year, though the reasons for this periodicity of increase are not known. The sock-eye salmon has an interest all its own. This species of salmon, like all salmon on the Western Pacific Coast, die after spawning, even before the eggs hatch, so that no Pacific salmon ever saw any of its children, or either of its parents.—The *Homœopathic World*, May 2, 1910.

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### A Wise Caution.

At a recent meeting of the Royal Society of Medicine of London the warning was given that clinical workers with radium may ultimately find that instead of curing what they consider is cancer, they are in reality producing cancer. Another observer declared that after years of experience he had not found deep-seated cancer to be influenced by radium; that the "cancers" which had been cured by radium were indistinguishable from mere ordinary inflamed tissue.—The *Medical Times*, June, 1910.

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### The following is taken from the Chironian.

I wish to introduce a new method of examining sputum, fæces and all materials containing tubercle bacilli; its peculiar advantages being that it isolates and concentrates the bacilli. In the diagnosis of tuberculosis we must admit that the one sure diagnostic point is the finding of the bacilli. We have the X-ray and the percussion note and the Kroenig method of estimating the width of the apex, which I consider very valuable, but the X-ray is difficult to apply and the percussion note may be misleading. The finding of the bacillus is the one sure sign. Therefore any method which enables

us to find the bacillus more easily or to find it earlier in the history of the case than is now customary, must become a very valuable method in diagnosis.

Such a method is this which I wish to present to you this evening.

Antiformin is a liquid resembling ordinary Javelle water with the addition of strong soda lye. It is an intense oxidizer, and has the peculiar property of dissolving organic substances. The formula was patented in 1900 by a Swedish engineer, and was first employed in breweries for cleaning pipes. Uhlenhuth used it first in dissolving sputum, and found that it not only dissolved the mucus but also killed and dissolved bacteria. Staphylococci, streptococci, typhoid bacilli, gonococci and all the rest of them, with one exception, disappeared in a fifteen or twenty per cent. solution of this material. In treating sputum he found one type of bacterium that did not disappear, the acid-fast bacteria, of which the tubercle bacillus is the most prominent representative. He could mix up a sputum containing half a dozen different kinds of bacteria and at the end of five minutes every bacillus in the mixture was killed except the tubercle bacillus. Anthrax spores are also quite resistant. He realized that here was a simple method of isolating the tubercle bacillus. He devised a technique of mixing the sputum with antiformin, spreading it in a Petri dish and fishing out the lumps for examination or centrifuging and examining the sediment. Lange and Nitsche first made use of the ligroin method and Bernhardt combined the two. Ligroin is a light hydrocarbon resembling benzin. It is of lighter specific gravity than water and has the property, which is possessed by all light oils, that if introduced into an emulsion containing tubercle bacilli and shaken thoroughly, the little drops of oil will attach themselves to the bacilli and carry them to the top.

I have here a dram of sputum which was declared negative by the usual method. I examined the patient and diagnosed fibroid phthisis. The antiformin-ligroin method easily showed groups of bacilli.

Make a 20 per cent. antiformin solution (I recommend making the solution at the time you use it. I think there is a little loss of strength if kept for any length of time. Anywhere from fifteen to thirty per cent. solution is effective). To 5 c.c. of sputum in a cylindrical graduate or ordinary two-ounce bottle add 20 c.c. of the 20 per cent. antiformin, put in the stopper and shake thoroughly. The more it is shaken, the better. In about twenty minutes most sputa are liquified. Sometimes there are viscid masses that take longer than that to dissolve. They dissolve more quickly in an



incubator. The rate of solution depends upon the strength of the antiformin and the frequency of shaking. I have been letting the more viscid specimens stand over night. When dissolved, dilute the specimen with a little water to reduce its specific gravity, pour about one-eighth of an inch of ligroin on top and shake again vigorously. Emulsifying the oil reduces it to very minute drops. The tubercle bacilli adhere to these drops and rise with them to the top, resting at the junction of the antiformin and the oil. Then take out half-a-dozen loopfuls, place on a slide and stain in the usual manner. There is another point in the technique worthy of note. The loopful of benzoin evaporates very rapidly on a warm slide, and so you can keep putting one loopful on top of another, concentrating a number of drops on one spot. To your surprise you may find a sputum in which, at first, you failed to find any bacilli, reveal with this method fifteen, twenty or fifty in a field. Personally, I can vouch for the great value of this method in the examination of sputum.

Furthermore, the antiformin does not seem in any way to affect the vitality of the bacillus. Bacilli that have been treated with 20 per cent. antiformin grow well on culture media and are virulent for animals. Ordinarily, isolating tubercle bacilli from sputum is difficult, because the contaminating bacteria grow so rapidly as to cover over the slowly growing tubercle bacilli. With antiformin the other bacteria are killed leaving the tubercle bacilli to grow uncontaminated. Fifty per cent. antiformin solutions kill the tubercle bacilli, too.

Another point of value is that any pathological material, as urine or feces (which it deodorizes), or parts of an organ, as a piece of a kidney or a lymphatic gland, can be treated in the same way and dissolved, leaving the bacilli free. You can see the advantage over the old method of hardening, cutting a dozen sections, staining, mounting and then hunting for hours for your bacillus.

This leads to another phase of the subject, the difficulty in finding tubercle bacilli in undoubtedly tubercular tissue; and its explanation by the form of the tubercle bacillus that does not stain with Ziehl. This discovery was made in von Behring's laboratory by Dr. Much.

Dr. Much inoculated several calves with a culture of tubercle bacilli. When killed, they were found distinctly tubercular, but in the specimens of tissue from one animal examined he could not find a single tubercle bacillus. In trying variety of stains he devised

one which revealed the bacilli in great numbers. In addition, he found heaps of fine granules, some arranged in forms simulating bacilli and others like heaps of dust. On staining pure cultures of tubercle bacilli in the same way, similar heaps of fine granules were found.

This observation seems to explain several things. It explains why it is that when you send scrofulous glands and other tissue to the microscopists they fail to find any bacilli in them. Dr. Sayre will show a section of tubercular kidney in which no bacilli were demonstrable by Ziehl, but in which delicate blue bacilli are revealed in the tubercles by the Much stain.

This observation of Much may explain another curious thing which I have observed but have not been able to explain.

In tubercular phthisis, the bacilli sometimes disappear from the sputum, and then, for some unaccountable reason, they will come back. Schulz, of Davos, investigated ten of these cases with the Much method and found the dotted bacilli, the granules and the dust-like heaps.

Now, while the Much stain is useful for caseous glands and cold abscess fluid which usually contain no other bacteria, sputum and urine contain many other bacteria which stain with the Much stain, and this confuses the result. It has been suggested that antiformin will dissolve all other bacteria, so that a combination of antiformin and the Much stain would be specific for the tubercle bacilli. While antiformin dissolves most bacteria, I have observed a few remaining cocci and bacilli, which were not tubercle bacilli, after one week in antiformin. They were scanty, but still the presence of only a few undissolved bacilli would vitiate the results.

It is probable that a method of antiformin isolation and culture would give better results. The idea deserves further development and improvement in technique.—The *Homœopathic World*, May 2, 1910.

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### Death from Injection of Cocaine into the Urethra.

Several cases of death after the injection of cocaine into the urethra in ordinary doses for the production of anæsthesia have been recorded. The rules for this procedure, therefore, appear to require revision or some safer drug should be used. The latest case is recorded in the *Journal of the Royal Army Medical Corps* for May by Captain A. D. Jameson, R.A.M.C. A soldier had a urethral fistula secondary to a stricture 3 inches distant from the meatus.

An attempt was made to dilate the stricture with metal bougies, but it was found to be very sensitive. Four days later another attempt was made to pass a bougie after injecting into the urethra a little of a 10 per cent. solution of cocaine, the urethra being compressed between the finger and thumb behind the stricture. The solution of cocaine was not retained, but allowed to escape when the syringe was removed. After five minutes the stricture was found to be still sensitive, and more cocaine was injected in the same manner. Three minutes later, while the stricture was being dilated, the patient's colour was noticed to be very bad, and convulsion lasting half a minute occurred. The pupils were widely, the pulse was imperceptible, and the forehead was covered with sweat. Artificial respiration was commenced, strychnine and brandy were injected, and an electric battery was used, but the patient never rallied. The necropsy showed nothing important except a few cauliflower vegetations on the mitral valve, which, however, acted perfectly. The solution of cocaine had been in use for a fortnight. The amount retained in the urethra must have been very small, as when the pressure was removed after an injection its walls came together again and the fluid was expelled. In Dr. Dixon Mann's "Forensic Medicine" two cases are quoted of sudden death from injection into the urethra of a drachm and 20 minims respectively of a 4 per cent. solution of cocaine. However, these were the only fatal cases in a series of several thousands. In another case recently recorded in this country death occurred after the injection of 30 minims of a 10 per cent. solution of cocaine. Three cases of dangerous symptoms after the injection of 20 minims of a 10 per cent. solution have also been reported. Most authorities say that a 20 per cent. solution of cocaine may be swabbed on a mucous membrane, and in Chalmers and Cathcart's "Surgical Handbook" it is stated that 2 drachms of a 5 per cent. solution may be injected into the urethra with safety. Captain Jameson refers to another case mentioned to him by a brother officer in which death followed the introduction of a small amount of a 10 per cent. solution into the urethra to facilitate the use of the urethroscope. But although he has for years been in the habit of applying a 10 per cent. solution of cocaine to mucous membranes for small operations he has never before seen any toxic effects.—*The Lancet*, July 2, 1910.

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### **Is Operation Essential in all Cases of Extra-Uterine Gestation ?**

In describing this week some cases of extra-uterine gestation, Dr. T. B. Broadway puts the question, "Should cases of extra-uterine gestation be operated upon at once, or should rest be tried and abdominal section done when the acute stage has passed?" This is a question which cannot be answered in a dogmatic manner. In the first place, cases of extra-uterine gestation differ very largely in their characters and in their dangers, and while it may be quite a safe and indeed an advisable procedure to leave a case of encapsuled peritubal hæmatocele without operation, any delay to open the abdomen in the case of rupture of a tubal pregnancy may well lead to the death of the patient. Undoubtedly at the present time, in view of the excellent results obtained by abdominal surgery, and following the sound surgical rule to cut down upon the bleeding point, practically all surgeons open the abdomen immediately when they have made a diagnosis of a ruptured tubal pregnancy, or when they recognise an extra-uterine pregnancy before rupture or in the later months. The chief matter of dispute is as to the treatment of a definite case of peritubal hæmatocele when it is recognised as such and when, as it usually does, it follows a tubal abortion. Should such a case be operated upon or may it be watched with a very fair prospect that the swelling will become absorbed and the patient make a complete recovery without running the risk of an abdominal or vaginal section? It would be easy, and indeed it has been done, to adduce statistics supporting both views, and it is also easy to bring forward reports of cases in which either method of treatment has ended in disaster. In attempting, however, to form a judgment upon what is admittedly a very disputable point, the cautious surgeon will consider not only the exact pathological condition from which his patient is suffering, but also all the other circumstances of the case. There are, of course, a certain well-defined number of cases in which from the severity of the hæmorrhage, from the presence of suppuration, or for some other good reason it is essential that an operation should be performed; but, on the other hand, there are also a large number of cases in which the patient is at the time she comes under observation not suffering any grave ill-effects from the presence of a large collection of blood within the abdomen. Here a decision has to be come to taking into account very carefully, not only the present, but also all the future possibilities of the condition. In these days, in which an increasing

number of abdominal sections is being performed every year, it is well to remember that not every patient who has been dismissed as well by her surgeon is for ever immune from any trouble incidental to the operation she has had performed. Any practitioner of experience could relate cases where the after-effects of even a simple abdominal section have been far from satisfactory, and no one would deny that if a woman with an intraperitoneal hæmatocele can recover without the necessity for any operation, that is the best result which can be desired. But here we are at once met with the argument that although these patients recover, they do not recover so completely as those who have had the blood removed by operation, and that they are very likely to suffer some disability in after years from the remains of the hæmatocele. Such cases, however, may be capable of the explanation that there was something more than merely blood present, as for example, in the case recorded by Kretschmar, where at a laparotomy undertaken 13 years after the probable date of its death the bones of three months old fœtus were found in the abdominal cavity. We must further bear in mind that the average length of time required for the complete absorption of an intraperitoneal hæmatocele is about four months, a very long period for a working woman to be laid aside. Then, again, it must be remembered that even when the tumour has been entirely, or almost entirely, absorbed the patient is not necessarily cured; she may suffer some disability from the presence of the diseased tube or from adhesions. The question is indeed, not one to be answered hastily; the outlook as regards the recovery and safety of the patient is so evenly balanced in many of these cases that it must be decided after a very careful weighing not only of the exact condition present in the abdomen but also of the physical state of the patient, of her surroundings, and of her social position. Probably for many years to come the adherents of the non-operative method of treating these cases—that is to say, cases in which immediate operation is not indicated from the severity of the symptoms—will be as numerous as the adherents of the school who maintain that all the patients should be operated upon at once, no matter what the circumstances in which they may be placed.—*The Lancet*, July 2, 1910.

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### The German Medical Census.

IN accordance with a decision passed by the Federal Council in April last year a general census of the entire *personnel* of the medical and sanitary services in the German Empire was taken on May 1st, 1909. A preliminary report of the result obtained has now been published by the Imperial Board of Health, to which has fallen the task of compiling the material collected. The preceding census of this nature took place on April 1st, 1898, and in the following *résumé* the figures in parentheses refer to the census of 1898. The total number of qualified medical men in the German Empire was found to amount to 30,558 (24,725). Of these 211 were homœopathic doctors, against 240 in 1898. No less than 5912 specialists were returned, of which the majority, 4146, dealt solely with their own special branch of medicine, whereas 1766 also attended to general practice. Women doctors numbered 86, 33 of whom were engaged solely in institutes. Unqualified persons dealing with the professional treatment of sick persons were found to number 4468 (3059); among the 3146 male persons of this class were 40 physicians with foreign qualifications, and of the 1322 females 14 were qualified outside the German Empire. Qualified dental surgeons numbered 2667, which means about double the number returned in 1898—viz., 1299. The same increase was also observed in the case of the unqualified dentists, the number of which has arisen from 4376 to 8546. As regards the midwives their number shows but a slight increase—from 37,025 in 1898 to 37,736 in 1909; this means 5.94 to every 10,000 inhabitants; the proportion has dropped from 6.83 per 10,000 souls, the figure for 1898. On an average every German midwife attends to 54.8 births; curiously enough, the same average as existed at the time of the previous census. But the greatest increase is to be found in the ranks of persons who professionally in some capacity or another attend to the sick. In 1898 this class was represented by 29,577 persons, or 5.46 per 10,000 of the population, whereas now it embraces 68,818 persons, or 10.83 per 10,000 of the empire's population. The increase in the male element is very striking, the sexes being represented as follows: male, 12,881 (3150); female, 55,937 (26,427); formerly to every male nurse there were 8.39 female nurses in 1898, whereas now the number has fallen to 4.34. On the other hand, the proportion alters when we consider their relative spheres of occupation: of the 20,026 persons of the above class not engaged solely in nursing work in hospitals and similar institutes, only 897 were males and 19,129 females, while

the remainder, 48,792, were engaged in some sort of institution. The census also included a return of masseurs and of persons engaged in disinfection work. The masseurs numbered 1498, the masseuses 1723, out of a total of 14,789 persons engaged in work of the above nature. As the question of limiting dispensing to pharmacists, as in Germany and elsewhere on the Continent, is occasionally broached in Great Britain, it is interesting to learn that there is in Germany very nearly one pharmacy (exactly 0.96) for every 10,000 inhabitants, the total, including branch establishments, being 6127. The increase in the population of the German Empire is, indeed, very plainly reflected in the increase of pharmacies, which are only concessioned to keep pace with growing population, for in 1895 there were 966 less than in 1909. To the above number must be added 587 (533) dispensaries belonging to general practitioners, who obtain this right in the event of the nearest pharmacy being some considerable distance away, the population being not sufficient to warrant even the establishment of a branch.—The *Lancet* July 2, 1910.

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### Mere Man if the Suffragette Prevails.

Among the arguments put forth in favor of the extension of the franchise to women is that their influence would make itself felt in legislation affecting various social relations in which women are particularly interested. Among such subjects would be the prevention of venereal disease through the suppression of the "white slave traffic" and of prostitution. Dr. W. L. Holt, of Banning, Cal., believes that "the emancipation of women" will be one of the necessary prerequisites for the suppression of the social evil, or the suppression of so much of it as can be suppressed. In an address before the Southern California Health Association, he said:

"The truth that man, not woman, originated prostitution, that it is perpetuated for his pleasure, not woman's, needs to be preached from the housetops. As Dr. Morrow happily expresses it, 'The male factor is the chief malefactor.' He adds: 'The *causa causans* of prostitution is masculine unchastity—the polygamous proclivities and practice of the male, which lead him to seek the gratification of his sexual instinct whenever and wherever he can find a receptive partner.' If every prostitute now living were swept out of existence, a new army would be at once recruited from the underpaid working girls, to satisfy the existing demand; and they would at once be infected by the licentious men, well-called prostitutes who are hotbeds of gonorrhea and syphilis.

But man has always treated women with cruel injustice, and in every crusade against vice, he has always attacked poor woman, his victim and tool. All repressive measures employed by the State, all sanitary regulations, and all persecutions (signified by the name of moral crusades) have been directed against the woman alone. Prostitutes have been subjected to restricted laws from the time of Moses, who punished adultery by death; they have been scourged; they have been exiled; they have been fined; they have been branded with a special costume; and lately in Paris, Berlin, and other European cities, they have been licensed and examined often for venereal diseases, and if diseased, have been quarantined for a time—in short, man has tried every legislative device to suppress these women that the most clever or stupid politicians could invent from Moses down; but he has always let the more responsible and guilty prostitute—himself—go scot free. Surely, it is high time that the women took a hand at law-making and started to scourge, fine, exile, brand, segregate, license, examine and quarantine the men who make prostitutes or use them! Serious-



ly, I believe that when women achieve economic independence and political equality, as I hope they soon will ; when they learn the terrible menace of prostitution and its diseases to their sons and daughters ; and when they learn to teach their children the sacredness of sex and procreation—then, and not till then, will prostitution, the foulest blot on human civilization be abolished."

This question of sexual ethics is a serious matter and is one of the factors in prostitution, and therefore, in the prevention of venereal disease. How far the enfranchisement of women would serve to solve it is problematical. Two other factors, probably of greater importance, would have to be solved first, or at the same time. One of these is the question of education, men and women have to learn what the venereal peril involves ; the other question is of an economic order, we must see that girls and women who work for their living have the opportunity to live by their work, they must receive a living wage. Investigation has shown that a very large number of young women become prostitutes, not from choice, but because they need, actually need, the money that can therefrom be obtained, and which they cannot earn in any other way.—*The North American Journal of Homœopathy*, June, 1910.

### Edible and Poisonous Fungi.

According to some observers, the mushroom may be regarded in dietetics as a vegetable steak ; others, whilst not denying that it possesses certain nutritive value, have endeavoured to show that hitherto this value has been exaggerated. The truth is that while the chemical analysis of the mushroom would assign to it a notable proportion of protein and carbohydrate materials, experiments upon the digestibility of these substances have shown that in their entirety they are not easily assimilated. The chief attraction of the mushroom is, of course, its peculiarly pleasing flavour, a flavour which has occasionally led consumers into trouble owing to the poisonous qualities of certain of the fungi. This fact, indeed, deters a good many people from eating mushrooms, the risk of poisoning being, in their view, a real one. As is pointed out, however, in an excellent instruction recently issued by the Board of Agriculture and Fisheries, the poisonous kinds of fungi are comparatively few in number, while there are, on the other hand, some 50 species of native fungi which may quite safely be eaten. What is wanted, therefore, is a knowledge of the special features possessed by each species, and this is supplied by this little book, which can be obtained at the office of the

Board of Agriculture and Fisheries, Whitehall-place, London, S.W., at the modest price of 1s. It contains 25 plates admirably drawn and coloured; the pictorial representations are, in fact, true to life, and so the book serves as a very useful guide to all those to whom mushrooms are a dietetic delicacy, but who hesitate to eat them because they cannot be certain of differentiating accurately between poisonous and edible kinds. It is interesting to learn that the rule-of-thumb signs for discriminating between edible and poisonous fungi are absolutely valueless, and no reliance can be placed on such assumed infallible tests as the presence of a skin that is readily peeled off, indicating an edible mushroom, or the fact that a silver spoon placed in contact with poisonous kinds becomes tarnished, or that all fungi growing on wood are poisonous. We have quoted enough to show how useful and interesting is this latest addition to the series of practical guides on agricultural and botanical questions which the Board of Agriculture and Fisheries issues from time to time.—*The Lancet*, June 4, 1910.

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### Overdosage in the treatment of Tuberculosis.

Dr. A. K. Benedict in the *Therapeutic Gazette* believes that the treatment of tuberculosis has been overdone. Firstly, he condemns serum therapy as applied to it, believing that it differs from the other diseases where this method of treatment has proved of value, in that phthisis is not self-limited, recovery brings no safeguard against another attack, and because he thinks that the use of tuberculin has failed to bring about cures and that its continued use is dangerous.

2. He condemns antiseptics, on the ground that not one of the drugs used has proved efficient and indeed the continued use of such drugs as guaiacol, arsenic and similar drugs have brought about positive harm.

3. Expectorants, sprays, etc., are of no benefit save as a means of euthanasia. The influence of most of the vegetable expectorants on the digestive organs is irritating and tends to depress nutrition. We should apply the principle of letting the diseased organ alone and apply the treatment to the general condition.

4. The writer does not believe in general medication, as nothing will "tone up" the system except food, and food that is assimilated. There is no such thing as a tonic or an alterative. He is convinced that meat, spinach and other vegetables contain all the iron needed. Iodine often increases the breaking down of tuberculosis

tissues. Palliative measures and drug tinkering are out of place in tuberculosis.

5. Nourishment is often overdone, as the diet of the tuberculous patient may distend the stomach or produce fatigue by the frequency of meals. The consumptive needs ten per cent. more of assimilated nutriment than the non-tuberculous person similarly circumstanced. As rest in the open air is now preferred to active exercise, he usually requires no excess over the standard ration. Overdose of one nutriment is likely to be associated with underdosage of another. Milk diet gives too much fat and proteid too little carbohydrate, and if he gets enough nutriment he gets too much water. Eggs contain no appreciable amount of carbohydrate. Raw egg-albumen will produce albuminuria, yet the patient is given a prescription for raw eggs. Alcohol increases the rapidity of the tuberculous process. Except for febrile cases which require much the same diet as typhoid, the tuberculous patient needs about the same diet range as the ordinary person in good health. His appetite may be tempted by well-cooked and daintily served food, but he will thrive best on well-assorted, ordinary foodstuffs.

6. Rest. The patient should not be unduly discouraged by feeling that every little movement or mental activity is beyond his strength. Perhaps he might as well die of tuberculosis as live a useless and idle life.

7. Climate. Probably any climate will suffice provided the air be free from irritating materials, such as coal, soot, stone or metal, and be not subject to sudden changes of humidity and temperature. It is a mistake to impoverish and worry the patient and drive him into the agonies of nostalgia, by insisting on a change of climate.

8. Fresh-air. The term overdosage is particularly applicable to the insistence on continuous outdoor life without regard to wind, rain and excessive cold. It is difficult to understand why the consumptive must bear exposures which the healthy individual would avoid. Unless it be shown that constant breathing of cold air has some direct effect upon the bacillus or indirect effect upon the tissues or leucocytes, it seems questionable whether the conservation of bodily heat by clothing and rugs is superior to an artificially warmed but pure atmosphere. And it must also be questioned if it is advisable to almost totally suppress perspiration and dermal exhalation.—*The North American Journal of Homœopathy*, June, 1910.

## Cleanings from Contemporary Literature.

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### THE ROLE OF SYSTEMATIC MOTOR AND SENSORY TRAINING IN CERTAIN MENTAL DISEASES OF CHILDREN.

E. A. FARRINGTON, M. D., HADDONFIELD, N. J.

As physicians, in the broadest sense of the term, we are concerned not only with the alleviation of pain and the cure of disease, but also with the upbuilding of health and the improvement of bodily efficiency. To obtain satisfactory results in this work it is necessary to begin with the child, and we are thus called upon to solve problems and deal with conditions that are closely related to the field of education. The most important problem to be met in this connection is that of the development and training of the motor and sensory apparatus. In perfectly normal and healthy children this development may without great harm be left to itself, for motor activity and co-ordinate control come spontaneously with the common games and plays of childhood, and sensory development is unconsciously brought about by contact with the child's environment. But even if this be true, systematic training of these activities during childhood is of the highest benefit in after life. We are accustomed to educate the voluntary muscular system; the usefulness of this procedure is universally admitted. But the sensory apparatus is commonly much neglected. Professor Charles W. Eliot, in discussing *Education for Efficiency* (Riverside Educational Monographs, 1909, p. 6), says: "The training of sight, hearing, smell, taste and touch has been neglected in education to an extraordinary degree. Quickness and accuracy in all the senses are of high value to the individual throughout life; and in innumerable cases some slight but unusual superiority in one or more of the senses becomes the real basis of success in life."

If this training be necessary for the normal child, how much more is it necessary for the child whose physique is impaired by deformity or disease, and whose motor and sensory mechanisms are rendered inefficient by weakness or defect?

In no class of cases will the physician be called upon to utilize his best knowledge upon this subject more adroitly than in those mental affections of childhood commonly grouped together under the name of mental defect, or, as it is better styled, mental subnormality. Mental subnormal children very rarely show any spontaneous tendency to clearly co-ordinated muscular or sensory activity, and yet the prognosis of such cases must be based almost wholly upon the possibilities of development of the sensory-motor system. Failure to recognize this fundamental fact has brought about permanent defect in many a subnormal child who might otherwise have been made a useful member of society.

In all forms of mental subnormality it is a familiar axiom that "after treatment comes training." It is the physician's duty, therefore, when acute symptoms have subsided and chronic conditions have been controlled, to prescribe a suitable and adequate system of training to meet the requirements of the sensory-motor apparatus, and it is the purpose of this paper to outline a series of exercises of this kind that have been found particularly useful in dealing with the class of cases in question.

These exercises are based largely upon the experience of the founder of the Bancroft Training School, who has studied the problems involved in this subject for more than twenty-five years. The exercises have been shown to be of value in all forms of mental defect, whether due to inherited conditions or acquired diseases. They are especially useful in cases of cerebral or cerebrospinal meningitis, encephalitis, intracranial hemorrhage or other conditions accompanied by some form of hemiplegia. In children of the malnutritional type, also, where rachitis or marasmus has occurred in early life, much can be accomplished. Cases belonging to the hypothyroidal group, such as mild cretinism, mongolianism, certain forms of obesity, etc., are all greatly improved by these systematized motor and sensory exercises.

One of the fundamental principles of this system of training is that all motor and sensory activities are, for the purposes of development, considered to be purely physical. They are treated simply as physical exercises. We are accustomed to think of muscular activity in this way, but the connection between the senses and such psychologic faculties as attention, association, memory, etc., and their close correlation in text-books on psychology, has led us commonly to regard sensory phenomena as being psychologic rather than physiologic, and as involving mental rather than physical states.

While it is true that this relation between mental faculties and physical functions is remarkably intimate, so intimate, in fact, that the latter may be exercised and developed by training the former (the method usually followed in our kindergartens), nevertheless in mentally subnormal children this connection must be temporarily lost sight of if the best results in motor and sensory training are to be gained. The organs of special sense, the afferent nerve-pathways, and even the sensory centers of the cerebral cortex, may be exercised by appropriate means, although the child may be totally unconscious of their nature and significance. The nutrition of the structures involved may thus be improved, their tissues developed and their functional efficiency raised, exactly as we are accustomed to see done with the muscular system in the gymnasium.

Motor training by means of graded and systematized floor and apparatus work in the gymnasium is of the greatest value in the development of subnormal children. Many of them are able to do only light work, but this can be carefully selected and applied, so that the structures in need of particular attention may receive it without overtaxing the nervous, circulatory or other systems. Hemiplegic cases may be given special

exercises for the affected side, foot, leg, trunk, hand, arm and face exercises being included. In addition, these cases may have corrective work in the form of passive movements, massage, and if possible vibratory and electrical treatment. Series of simple exercises may be worked out, adapted to the peculiar needs of each child, and these may be so selected that they may be carried on in the home with only the simplest possible apparatus.

All of these methods of motor training are so familiar to the physician that they need not be dwelt upon here. There are, however, a few special exercises that deserve mention. In diplegic or marked hemiplegic cases it may be necessary to spend much time in training the child to walk. This has been accomplished with good success in our school by a device composed of head and shoulder straps attached to a tackle running upon an overhead bar or track. After placing the child in this apparatus so that the feet rest fully upon the floor, it may be necessary for the instructor to move the feet and limbs, imitating the movements of walking. This should be persisted in daily until the movement becomes spontaneous. It is remarkable what may be accomplished in this way if time enough is allowed.

Another walking device consists of a platform about fifteen feet long and two feet wide, raised five or six inches from the floor. At appropriate intervals in this platform oblong holes are cut through to the floor in such manner that they are adapted to the angle of eversion of the foot and the length of the step while walking. They are lined on the sides with wood, and look much like footsteps in deep snow. The child is required to walk over this platform, placing the feet in the proper holes. The exercise requires the feet to be lifted several inches at each step, and helps to overcome the dragging of the lower limbs, so common in paralytic cases. Still another apparatus is composed of a plank two inches thick and ten feet long supported on edge about a foot from the floor. The child is required to walk along the edge of this plank with little or no assistance, and is thus encouraged to co-ordinate the muscle-groups involved in the maintenance of equilibrium. Spontaneous hand, arm and shoulder movements, particularly of the co-ordinative type, are often difficult to develop. Even the simple act of prehension is sometimes wanting. The muscles involved in the grasping movement may be developed by a special form of glove containing stiff rubber elastic bands attached to the back of each finger and fixed firmly by a wristband. These bands act a little like the extensor muscles of the fingers and wrist, the flexors being required to contract against resistance. Grasping may be elicited by offering the child an object that arouses interest, such as an apple or a toy.

Lifting and carrying heavy objects, if systematically performed, is a most useful form of elementary motor training. The best objects for this purpose are some round cobblestones about six inches in diameter, some Roman bricks and a few wooden cylinders measuring six by ten inches. These are all heavy enough to necessitate the use of two hands. With

these objects a series of exercises consisting of simple lifting, lifting and placing, carrying to a definite spot, piling, building, etc., may be worked out that can be taught to any subnormal child who is able to walk. This training lays a foundation for the finer co-ordinative exercises of block building, clay modeling, etc.

The more complex motor activities may be developed even where physical stigmata are marked, by careful attention to suitable apparatus and by persistence in regular exercise. Simple and complex peg-boards, sewing-boards etc., are all of great value. All of these objects should be very large. The common apparatus used in the kindergarten is too small even for the normal child, and is quite useless in the hands of the subnormal. The pegs for peg-board work should measure not less than  $2\frac{1}{2}$  inches in length and  $\frac{1}{2}$  inch in diameter. The child should be able to grasp them with the whole hand. The sewing-board consists of a light pine board 14 inches square, in which are several rows of  $1\frac{1}{2}$  inch holes well reamed out on both sides. The child is taught to pass an 8 inch wooden needle, "threaded" with soft  $\frac{3}{8}$  inch rope, in and out of these holes, imitating various stitches. A child who would find it impossible to take a single stitch with an ordinary needle will learn to use this board in a few weeks, and by changing to smaller apparatus will eventually be able to sew very well.

The weaving-board is a 20 inch frame covered with  $1\frac{1}{2}$  inch webbing, stretched tightly across in one direction only. The child is taught to weave a long flat needle in and out across the bands of webbing, drawing through detached strips of webbing, the final result being much like a very large kindergarten mat. The webbing may be dyed to form appropriate combinations of color.

The value of these forms of co-ordinative motor training lies not alone in the fact that they develop the motor apparatus, and help the child to acquire facility in the complex movements necessary in daily life. They are also important because of the relation between motor activity and mental growth. They stimulate nutrition in the motor areas of the cerebral cortex, wake up the gray cells of the cerebellum, and encourage the formation and active functioning of association fibres. They thus indirectly aid in the development of memory, thought, will and other mental faculties. Dr. Boris Sidis is of the opinion that motor elements form the nucleus of consciousness. He says in this connection: "Motor consciousness forms the main body of our mental activity. \* \* \* The great majority of mankind still leads a life closely allied to animal sensori-motor states. Instances the delight of children in their play, and the all-absorbing interest of college students in their baseball and football games. Even in the highest and most developed forms of mental activity, motor ideas and representations are by far the most predominant. Without motor elements ideational life is arrested. It is these sensori-motor and ideo-motor elements that constitute the stream, the flow, the current of our mental life." Motor elements enter freely into combinations with

all other elements of mental life." (*Analysis of Sleep* Boris Sidis, Boston, 109.)

The training of the special senses is best carried on by drilling one sensory mechanism at a time. Keeping in mind that the chief aim is development of the physical structures, the exercises and apparatus are to be selected with a view to excluding as far as possible every apperception, association or memory concept, except those related specifically to the sense under training.

In training the visual sense the aim should be to develop speed and accuracy in the recognition of form, color and arrangement. For this purpose the following objects are selected: A sphere, a cube, a cylinder, a pyramid and a cone. These objects should be of good size (not less than three inches in the smallest dimension). They should be of one color, and if color-training is associated with exercises in form, a set of models in each color should be provided. A square of dull black felt should be at hand as a background for the objects. Geometric forms are selected for these exercises because they are almost entirely without associational relations in the child's mind. The results of the training are thus due to the exercises only, and not to associated memories and the progress of the work can hence be safely measured.

In the first exercise a white sphere is placed upon the square of black felt, hidden beneath an appropriate cover. The pupil is seated about 30 inches from the object, and is required to name it after it has been uncovered a short time and then re-covered. The other forms are treated in like manner, the period of exposure being shortened as the pupil becomes familiar with the exercise. The color of the objects may be varied, and several models may be used in a group, the order of their arrangement being changed. When these exercises can be readily performed, correlation with familiar objects may be introduced, and similar exercises with other objects attempted. These exercises afford an efficient training for the visual apparatus, not only as regards the retinal and central structures, but also the mechanism of accommodation. Children who can not even talk will in time learn to recognize the objects, and will show their recognition by pointing out a similar object in a group of forms.

In training the color-sense the hypothesis of Hering has been adopted as a provisional basis for the exercises, this being the theory that comes nearest to covering the facts. The accuracy of all of Hering's conclusions may perhaps be disputed. Nevertheless, in practice the application of his general theory certainly appears to accomplish results. Hering's three chromochemical substances are accordingly made the basis of the color-training, and the exercises are planned to develop their quantity, activity and distribution. The color-pairs, green-red, blue-yellow and black-white, are used at first separately, the anabolic and catabolic colors being alternated. Later they are used in combination, and the training carried on to a series of carefully graded exercises in the recognition of the six fundamental spectral colors, and the differentiation of



their respective hues, tints and shades. In these exercises the old color theory of Brewster, involving primary, secondary and tertiary colors, is discarded for the more rational classification based upon the spectrum.

The auditory sense is developed by systematizing various sounds. Different instruments, such as the bell, rattle, horn, drum, triangle, etc., are utilized. The child is first taught to make the sounds himself. He is next required to listen while they are repeated without his being able to see their source, and he is then directed to indicate upon which instrument the sound was made. Many exercises may be introduced in this way. The chief points aimed at in the training are the accurate recognition of quality, intensity and pitch.

Gustatory and olfactory training are carried on together. The four gustatory fundamentals, sweet, bitter, salt and sour, are first developed; then a large number of stimuli are introduced, the vivid and striking being used first. A surprising degree of skill in detecting shades of difference may thus be obtained. The child is, of course, to be blindfolded during the exercises, and is required to depend entirely upon the sense under training for his conclusions. In gustatory exercises it is well to select stimuli that are non-volatile, as the possibility of recognizing the substance by simple olfaction is thus minimized.

Pressure, muscle, stereognostic and temperature-senses, which, in combination with pain sense, are commonly grouped together as "touch," should be trained separately.

Pressure-sense is developed by teaching the pupil to recognize such differences in objects as rough, smooth, hard, soft, elastic, etc. The exercises are performed by introducing two or more objects into a small cloth bag and requiring the child to insert one hand and select, by means of pressure-sense only the rough, or smooth, or hard objects, as the case may be. These objects should be alike in every respect, except particular quality to be studied. In this way the pupil may finally be taught to make comparatively fine distinctions, such as recognizing raw cotton, raw silk, wool, hair and fur, and differentiating cotton, woolen, linen and silk fabrics of various kinds.

Muscle-sense may be readily trained by using pairs of objects, each pair being of different weight. The best results have been obtained by using large cubes and pyramids (with square bases), colored white and carefully loaded with lead, so that a cube and a pyramid constitute a pair, each object of the pair equal in weight to the other, but differing noticeably from the other pairs. Bottles painted white on the inside and loaded with shot set in paraffin, or, in fact, any other suitable objects, can be employed. The chief points to be remembered are that the objects must be so constructed that they form equally weighted pairs, each pair differing from the others in weight, but resembling them in every other respect. All the objects are set before the child, and he is required to separate those of equal weight into their respective pairs. This he can do only by lifting the objects and measuring their weight by his muscle sense. The

exercises may be multiplied indefinitely. If cubes and pyramids are used, the pyramids should be set upon the cubes of like weight; the pupil may then be taught to arrange the pairs in a row, the heaviest at one end, the lightest at the other. These blocks or bottles may be utilized in developing the appreciation of weight by pressure-sense. The exercises should be the same as those above mentioned, except that instead of grasping and lifting the objects, they should be placed upon the upturned palm. In these exercises the back of the hand should rest upon the table, in order to eliminate as far as possible muscle-sense, which under ordinary circumstances is combined with pressure-sense in the estimation of weight. For training more extensive muscle-groups with heavier weights, tightly covered baskets, alike in every respect, but differently weighted with pebbles, may be employed. For example, the pupil may be directed to select the heaviest basket from a group of three and carry it to the teacher.

Stereognostic-sense may be brought to an excellent degree of development by placing in the black bag above mentioned several small objects which the pupil is required to recognize by introducing the hand into the bag and examining the shape of the object with the fingers. It is best at first to select geometric forms, such as the sphere, cube, cylinder, etc., using only three or four at a time. Later common objects of many kinds may be employed with advantage. The game in which the children are blindfolded and made to name various large objects, such as the furniture in the room, etc., is also a useful exercise in stereognosis.

The apparatus for the exercise of temperature-sense consists of six or eight vessels of similar form and color. Ordinary white enamel pint-cups serve the purpose well. These vessels are to be filled with water of different temperature. Two vessels should be used at first, one containing hot water, the other cold. When these have been made familiar to the pupil a third may be introduced containing lukewarm water, and finally the cups may be filled in pairs and the child directed to group them properly according to their temperature. The possibility of the pupil recognizing the difference in the vessels by their appearance, position or the amount of water in them should be carefully guarded against, so that temperature-sense will be the only sense available.

It is to be understood that in all the exercises described above, where the hand is employed, first one hand and then the other is to be exercised. When possible both hands may be brought into play.

The exercises here described afford but an imperfect idea of the scope and varied usefulness of motor and sensor training in the development of the mentally subnormal child. Some physicians have thought such training a foolish waste of time and energy; but this has been because they were not in a position to observe results. It is difficult to believe that a year's persistent and systematic application of the exercises here described can so fully arouse the sluggish and uncertain mental faculties of almost any one of these children. Interest awakens, perception becomes sharpened, memory grows active, association broadens, vocabulary

control on every plane begins to assert itself. The impulse to make something, to perform some deed, to win some goal, to accomplish something worth while—the great push and urge toward constructive activity—all these may be seen stirring into life under the hand of thorough training. Nor is the training difficult. The application of a few general principles, if properly made, will enable any physician to work out exercises, applicable to his case, that can be performed under his direction by a teacher or relative in any home not actually poverty-stricken.

Of course, miracles are not to be expected. Many cases improve so slowly, and some so little, that great achievements can not be claimed for them. But the majority of cases—and there are thousands scattered over the land—can be brought to a level of activity and usefulness by such training not only above the expectation of the physician, but beyond the hope of the parents.—*The Medical Advance, June, 1910.*

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THE  
CALCUTTA JOURNAL  
OF  
MEDICINE

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Vol. xxix.]

August 1910.

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[No. 8.

THE SURGICAL ASPECT OF APPENDICITIS.

BY WILLIAM CLOWES PRITCHARD, B.A., M.R.C.S. ENG.,  
L.R.C.P.LOND.

*Surgeon to the Buchanan Hospital, St. Leonards-on-Sea.*

MR. CHAIRMAN AND COLLEAGUES,—When I promised to give a short paper on "Appendicitis and its Surgical Treatment," I understood it would be for June, and so thought there would be plenty of time to go into the subject thoroughly. However, a few days after my promise was given, Mr. Eadie (Secretary of the Section) asked if I could not manage to give it in May instead of June. This I consented to do, but am afraid, as a result of this, that my paper to-night will be rather scrappy, and not so thorough or so interesting as I should like to have made it. The study of appendicitis is now so huge that I have but touched on its salient features, and must crave your indulgence in bringing before you such an interesting subject treated in such a fashion.

For example, I have not included in this paper either the embryology, pathology, or bacteriology of the appendix, but must refer you to such works as "Keen's Surgery," or "The Vermiform Appendix and its Diseases," by Kelly and Hurdon. In the compilation of this paper I have used these works very extensively; and, in a lesser degree, an article by Osler.



As a homœopath, I shall be doubtless condemned by many of my colleagues for the general tenor of some parts of this short paper; but, as a surgeon, I trust to be more leniently judged by my fellow users of that most useful and indispensable instrument—the scalpel!

To-night, then, I propose briefly to look at the study of appendicitis under the following heads:—

- (1) History of appendicitis.
- (2) Anatomy.
- (3) Morbid anatomy and etiology.
- (4) Physiology.
- (5) Symptoms and complications.
- (6) Diagnosis.
- (7) Prognosis.
- (8) Treatment—Medical, Surgical.

#### (1) HISTORY OF APPENDICITIS.

The first case recorded of disease of the appendix is the classical case of Mestivier which was reported in 1759. At the autopsy on this patient a large, very rusty pin was found in the appendix.

In 1766, Joubert Lamotte published a paper on a case of appendicitis which died from the results of a large faecal concretion in the appendix.

The *Bibliothèque Médical* for 1814 gives an account of a boy, aged 13, who died from an “adynamic fever.” At the autopsy, a great number of lumbricoid worms were found in the intestines, including four in the vermiform appendix.

In 1812, the first case was reported in England by a London physician of the name of Parkinson, and he actually recognized that the patient died from a perforation in the appendix! To him belongs the honour of having first recognized this fact.

In 1824, a Frenchman, Louyer-Villermay, published a paper on “*Observations pour servir à l’histoire des inflammations de l’appendice cecale.*” To him belongs the honour of first recognizing appendicitis as a distinct and separate disease.

In 1827, Méliér writes: "This disease is considered extremely rare. Observe, however, that the five cases which form the basis of this paper have been collected in a short space of time, and that two among them were reported by the same physician. These facts entitle us to believe that if such affections have not been more frequently observed it is because the appendix has not received sufficient attention, and because lesions situated in it have been overlooked at autopsies." Then he winds up by writing: "If it were possible, indeed, to establish the diagnosis of these affections in a certain and positive manner, and to show that they are entirely circumscribed, the possibility of an operation might be conceived. Some day perhaps this result will be reached." Fancy this in 1827!

In 1836, Richard Bright and Thomas Addison, in "The Elements of the Practice of Medicine," devote no fewer than six pages to "Inflammation of the Cæcum and the Vermiform Appendix."

In 1846, Voltr pointed out that the condition known as perityphlitis is not primary, but ~~consecutive~~ to inflammation of the vermiform appendix.

In 1847, Hancock, an English surgeon, reported a case to the Clinical Society of London. Suppuration and perforation of the appendix had taken place. After the operation there was considerable discharge, and, on the fifteenth day, two fecal concretions were found in the wound, and from that time the discharge lessened and the patient made a good recovery.

In 1850-51, Gay reported a case of "internal strangulation between the vermiform appendix, which had become adherent to the ileum and a band of false membrane."

In 1867, Willard Parker, of New York, published four cases in which he had treated abscess in the right iliac fossa consequent on inflammation of the appendix by incision and evacuation.

In 1871, Weber published an article on "Abscess of the Vermiform Appendix."

In 1881, Lawson Tait wrote: "So satisfied have I been with the results in abdominal section that in the next case of peritonitis to which I am called of whatever sort it may be—even puerperal—I shall advise and perform abdominal section; shall cleanse out the cavity and drain it, and if the operation be not deferred until the patient is moribund, I believe this treatment will prove eminently successful."

In 1881, Heming Burchard, of New York, read a paper on "Operative Interference in Acute Perforative Typhlitis." Here we have the term "typhlitis," used, and it was not until about 1886 that the terms typhlitis, perityphlitis, and paratyphlitis were practically discontinued owing mainly to Fitz, who secured recognition for the diseases of the appendix as a distinct class by themselves.

In 1884, Kronlein, of Germany, operated and resected the appendix *in toto*, after having placed a double ligature at the base of the appendix and a single ligature round the mesentery.

In 1885, Charters Symonds, of Guy's, did the first "interval" operation for appendicitis, but without removing the appendix. This was performed on a man whom Dr. Mahomed, also of Guy's, diagnosed as suffering from appendicitis. This operation was performed extra-peritoneally through an incision almost exactly similar to that used in ligaturing the external iliac artery.

In 1887, we find Frederick Treves and Morton operating on the appendix, and in 1888 Treves wrote: "In the majority of cases it would probably be wiser to remove the appendix. If this is done as much care must be taken to close the divided end of the tube as would be taken to close a hole in the small intestine. A mere ligature would not suffice."

And, finally, in the same year, N. Senn wrote, speaking of non-perforated cases: "Drainage in such cases is unnecessary and should be dispensed with."

This, gentlemen, is a brief outline of the history of appendicitis, and I have but tried to give an account of the main incidents as they have been brought to our notice, hence you

may miss many names, such as Pepper, who, in 1883, described the relapsing form; and Bull, McBurney, Weir, Keen, Denver, and others, all of whom have given us interesting articles. So that I hope I shall be forgiven if, in trying to be brief, I have omitted any really important link.

(2) THE ANATOMY OF THE VERMIFORM APPENDIX.

The vermiform appendix, says Paul Reclus, "is the diverticulum of a diverticulum, the cæcum of a cæcum." Morphologically, as well as structurally, the appendix is merely a portion of the general cæcal pouch which has remained in an early stage of development and corresponds to the long terminal portion of the cæcum found in lower animals. The appendix is pushed to the left, and apparently carried back by the predominating growth of the anterior wall of the cæcum. Hence in about 90 per cent. of cases it usually branches off from the inner or inner and posterior wall of the cæcum, about 1 in. below the lower border of the ileum, where the latter enters the large bowel. The direction, however, that is taken by the appendix is most variable. Lafforgue, for example, found it hanging into the pelvis in 41.5 per cent. of 200 ~~cadavers~~ of all ages and both sexes; pointing towards the spleen in 26 per cent.; resting on the iliacus in 17 per cent.; and retrocæcal in 13 per cent. Thus for all practical purposes we may say the appendix points either *up and in* or *down and in* over 50 per cent. of cases examined.

As a result of the free movement of the appendix it may become adherent in various situations—to the omentum, mesentery, parietal peritoneum, the rectum and bladder, or the internal genitalia of the female. A fistulous communication may be established between the adherent appendix and the other parts of the bowel, *e.g.*, the cæcum, ileum, and rectum, and finally it may be found in a hernial sac, or when the cæcum remains in its primitive foetal location it may be found in the left iliac fossa.

The size of the appendix is as variable as its position. Wista and Luschka give 1 in. to 9 in. as its length; Trevor and Georgieff 1 in. to 9½ in.; diameter, about ½ in. It is

provided with its own mesentery, and between its layers we find unstriated muscular fibres, the appendicular artery and its branches, with the accompanying veins, nerves, and lymphatics.

The lumen of the appendix opens into the cæcum about 1 in. below the ileo-cæcal valve. For a description of its structure and of the distribution of the blood-vessels and lymphatics I will refer you to any work on anatomy.

### (3) MORBID ANATOMY AND ETIOLOGY.

This can be conveniently studied under : (a) Predisposing causes ; (b) exciting causes ; (c) essential causes. -

(a) *Predisposing causes* may be *local* or *general*. Among the most important are the normal, anatomical, and physiological conditions. The appendix being a blind sac of relatively great length and small calibre, and resembling the tonsil in its abundant lymphoid tissue, and bordering upon a cavity particularly rich in bacteria, favours the stagnation of ingesta and an increased virulence of the contained micro-organisms, whilst the presence of so many follicles affords an excellent means of entry for bacteria. A similar *locus minoris resistentiæ* is created when the normal appendix becomes adherent to an adjacent structure—a frequent complication in pelvic inflammation, tumours, &c.

W. P. Manton states that in his experience moveable kidney is the most frequent cause of chronic appendicitis ; whilst, on the other hand, C. P. Noble, in 100 operations on moveable kidney, only observed the association in six cases !

*Age*.—Appendicitis is distinctly a disease of early life, being commonest between the ages of 10 and 30.

*Sex*.—Sonnenburg found in 1,000 cases of appendicitis, 67 per cent. were males. Roux, in a series of 670, 53 per cent. males ; Barbier, in a series of 616, 76 per cent. males.

*Nationality and Diet*.—Lucas Championiere, in an analysis of 22,000 patients, among Roumanian patients, found but one case of appendicitis ! They live mostly on vegetables, as also do the Japanese and the tribal Arabs, amongst whom appendicitis

is very rare, but the Roumanians and Arabs living in towns, where meat is freely partaken of, are frequently attacked.

*Hereditary Influence.* This cause may be due either to a peculiar form of the appendix, to diminished resistance to infection, or perhaps also to the mode of life and the diet being similar.

(b) *Exciting Causes.*—(i.) *Digestive Disturbances.*—In many we find a history of chronic constipation, and indigestion. In some an attack of diarrhoea precedes the appendicitis, but even in these we mostly have habitual constipation. At times an attack can be traced to an indigestible meal. (ii.) *Menstruation.*—The probable explanation of this cause may be that the congestion of the whole splanchnic area which accompanies the lowered blood-pressure of the peripheral circulation during menstruation creates a favourable nidus for the activities of the micro-organisms found in the appendix. (iii.) *Trauma* is frequently a direct cause of appendicitis—straining in heavy lifting, a hard bicycle ride, jumping, swimming, have each been noted. Exposure to cold might also be mentioned under this head. (iv.) *Foreign bodies and concretions.*—These are very varied, e.g., fishbone, core of apple, pins, worms, faecal masses, &c., &c.,

(c) *Essential Causes.*—The immediate cause of appendicitis has been stated to be “microbic infection.” The normal appendix containing the infective agents which, though dormant in the healthy condition of the bowel, awake to activity under favourable circumstances. The experiments of Roger and of Klecki show that it is not necessary to introduce virulent bacteria into the appendix to produce an inflammation. Nicolaysen, after experimenting in various ways states that appendicitis is primarily due to the extension of an infective enteritis, and Dieulafoy believes that in associated suppurative cholecystitis and appendicitis, that the involvement of the appendix is secondary, and is due to descending infection.

*Appendicitis as a Local Expression of a General Infection.*—The frequent association of appendicitis with rheumatism and

other diseases has been noted. In my own experience I came across a family where five members were in bed at the same time suffering from appendicitis. I was called in to operate on the youngest, but found it too late to do anything, the child dying that same evening. Two days later I was called to operate on one of the others. In this patient perforation with abscess formation was present. I operated at once, and the child did well. The others got well without surgical interference. I suspected the drains as being the cause of this outbreak, and when tested they were found to be very leaky and defective.

#### (4) PHYSIOLOGY OF THE VERMIFORM APPENDIX.

I shall be content with this part of the subject just to quote the opinions of a few writers.

(1) *Lieberkühn* states : "The surface of the vermiform appendix is full of glands, secreting a fluid which mingles with the fæces in the cæcum, and, by diluting these, prevents their remaining stationary and doing harm. The fact that the appendix contracts at the same time as the cæcum prevents any foreign body entering the lumen."

(2) *T. Vosse* : "The surface of the appendix is full of glands which secrete a mucus. . . . As there is a tendency for fæces to accumulate and harden in the cæcum, there must be some provision by which they are rendered more fluid. Glands are present in the cæcum for this purpose, but they are not sufficient and require aid, and the function of the vermiform appendix is to provide additional secretion."

(3) *G. von dem Busch* emphasizes Lieberkühn's views and adds : "The appendix must be considered as a second salivary or pancreatic gland, while the cæcum is a second stomach."

(4) *H. H. Smith* writes that the appendix exerts some influence on the action of the cæcum in digestion is quite probable, as its mucous coat differs very materially from that of the cæcum and colon in the arrangement of capillaries and mucous crypts. The presence of a vermiform appendix in certain herbivorous animals, and its absence in the carnivora,

would also seem to indicate that this organ has some influence on the digestion of vegetable matter.

(5) SYMPTOMS.

(1) *Pain in the abdomen*, sudden and severe, primarily referred to the epigastrium. It usually reaches its acme of intensity about four hours after its onset, and in the majority of cases gradually subsides. When it ceases suddenly within the first thirty-six hours, we must look out for liberation of the infective material into the caput coli rupture, or complete gangrene. The secondary pain, occurring after the first thirty-six hours, is usually not colicky but of the typical inflammatory type. Severe pain after the primary subsidence is always a signal of great danger, as it means perforation or the beginning of peritonitis.

(2) *Nausea and Vomiting*.—(a) The primary nausea and vomiting are reflex due to over-distension of the appendix. (b) The secondary nausea and often persistent vomiting are due to infection of the peritoneum.

(3) *Abdominal sensitiveness* is at first diffuse, although the abdominal wall is not practically rigid. When the appendix becomes fully distended and tense it will not tolerate pressure, and then there is marked rigidity of the abdominal muscles. As soon as the acute tension subsides, the general sensitiveness disappears, and we get a tenderness, more or less marked, localized over the appendix area.

(4) *Temperature* is always present in the early stage of an acute infective case. This is, however, a symptom that is often misleading in the later stages, and at times must be practically disregarded.

(5) *Leucocytosis*.—A sudden fall in the total number of leucocytes is a very unfavourable sign. Beginning recovery is manifested by a rise in the absolute number of mononuclear and eosinophile leucocytes.

(6) *Tumour* is very variable, and may even sometimes be absent.



(7) *Pulse* varies tremendously, but if the rate of the pulse keeps high, even when the temperature improves, then I think we must be on our guard.

Other symptoms we might just mention are: (a) Great irritability of the bladder. (b) Urine may be scanty and often contains albumin and indican. (c) The decubitus is often dorsal and the right leg semi-flexed.

#### COMPLICATIONS.

- (1) Suppurative peri-appendicitis.
- (2) Generalized peritonitis.
- (3) Intestinal obstruction.
- (4) Septicæmia.
- (5) Pyæmia.
- (6) Pylephlebitis.
- (7) Hepatic abscess.
- (8) Subphrenic abscess.
- (9) Lung and pleural affections.
- (10) Vesical and renal complications.
- (11) Fatal hæmorrhage.
- (12) Vascular complications.
- (13) Retro-peritoneal infections, &c., &c.

#### (6) DIAGNOSIS.

The diagnosis of acute appendicitis is rarely difficult, the symptoms occurring in such uniform order—first the pain, then the nausea and vomiting—then local sensitiveness to pressure, and then rise in temperature from 99° to 105·5° F., and finally the leucocytosis.

The differential diagnosis in acute attacks of appendicitis involves an exclusion of: (a) Cholelithiasis; (b) acute intestinal fermentation; (c) renal calculus and retention; (d) acute tubal affection; (e) rupture of intra-abdominal abscesses; (f) gastric and intestinal perforations; (g) intussusception; (h) twisted tumour pedicle; (i) tuberculosis of the intestine, especially of ileum; (j) typhoid fever; (k) acute cystitis; (l) gynaecological affections—and here I think an interesting paper could be given on the relationship of appendicitis to gynaecological affections.

These are some of the conditions which should be mentioned in making a differential diagnosis, but owing to the extraordinary positions in which the appendix may be found, this number might be greatly increased, but I will spare you this evening gentlemen.

#### (7) PROGNOSIS.

I think we must at once state that this depends entirely upon the form of the attack, but there is always so much uncertainty about each individual case that the prognosis should be a guarded one. Fortunately the great majority of cases recover.

#### (8) TREATMENT.

And now, gentlemen, we come at last to the *Treatment* of appendicitis. My paper this evening is to be confined to the surgical treatment of this most interesting affection, so I will not take up your valuable time by mentioning the various drugs which we as homœopaths know to be so very helpful. I cannot, however, let this opportunity slip by without mentioning what Osler says from the physician's standpoint: "So impressed am I by the fact that we physicians lose lives by temporising with certain cases of appendicitis, that I prefer in hospital work to have the suspected cases admitted directly to the surgical side. The general practitioner does well to remember, whether his leanings be toward the conservative or the radical methods of treatment, that the surgeon is often called too late, never too early." With the latter part of this statement I must frankly say, gentlemen, that I fully agree, and after ten years of operative work I can say I have never yet lost a single case of appendicitis to which I have been called in time. It is true I have lost three cases which I will briefly submit to you.

(1) That of a patient who had been sent into the Buchanan Hospital with "stoppage of the liver" (*sic*) as a diagnosis. In this case the liver was all right, but there was a perforated and gangrenous appendix, and a huge abscess. Even here, although

the patient was quite collapsed, he rallied considerably after the operation, but died on the sixth day.

(2) That of a lad, aged  $10\frac{1}{2}$ , who was almost moribund on admission. Slight improvement followed the operation, but death took place on the third day.

(3) A grossly neglected case, diagnosed as appendicitis, and yet not seen by the medical attendant from Saturday until the following Thursday. The child was then hurriedly sent  $9\frac{1}{2}$  miles in a cab, and operated on as soon as possible, but death took place in forty-eight hours.

One more item from Osler, with which I do *not* agree. "There is no medical treatment of appendicitis! There are remedies which will allay the pain, but there are none capable in any way of controlling the course of the disease." Imagine this statement, in A. D. 1910!

The time for surgical intervention in appendicitis may be considered in four periods: (i.) Early operation, performed within the first forty-eight hours; (ii.) intermediate operation, from the second to the fifth days; (iii.) late operation, after the formation of abscess; (iv.) interval operations, which are performed sometimes after an attack, in the quiescent state.

(i.) With regard to the early operation performed within the first forty-eight hours, we can say it is *safe*, because we can never tell which cases may go on to suppuration. It is also more easily done, for there will not be any dense adhesions to be dealt with, and the appendix can more easily be reached than at a later stage, when there may be matting together of the intestines. Further, the patient may be saved days of acute suffering, as the attack is reduced to a brief surgical illness, instead of a protracted illness of weeks or months; and, lastly, the liability to recurrent attacks is obviated; for at this early stage the appendix can be removed, whereas sometime at later stages it is impossible to do so on account of the matting together of the intestines. Recovery from the attack *may* take

place under conservative treatment, recovery from the disease is certain only when the appendix has been removed.

(ii.) *Intermediate Operation.*—This is the operation that calls for so much judgment and anxious thought on the part of the surgeon, for he has now to consider the difficulty and danger of breaking-down adhesions, lest he be the means of spreading a localized infection, and many surgeons prefer to wait and see if the disease will abate, or if a well-defined abscess will form which can be evacuated. The class of case one has to consider under this heading may be divided into three:—

(a) Cases which are evidently getting worse, as shown by continued pain, swelling, tenderness, muscle spasm, and increasing temperature and quickened pulse. These cases, I think, should be operated on without delay.

I was called to see Miss H., of Bexhill, late on Friday evening. She had been in bed ten days with appendicitis, but as pulse was getting more rapid, and the general condition was deteriorating, a consultation with view to operation was decided on. On examination, pulse was 104, and evidently an abscess had formed. Owing to the absence of a near relative I could not get permission to operate for more than three hours. During that time the pulse had risen to 124.

At the operation there was evidently a deep-seated and large abscess. Instead of opening this I simply put a large drainage tube right on to the site of the abscess, after breaking down some of the adhesions. Although no pus escaped for sixteen hours the temperature and pulse began to come down soon after the operation, and the patient made an uninterrupted recovery.

A second case, with deep-seated abscess, I treated in the same way and the patient did splendidly.

(b) Cases in which the patient although not growing worse, is not distinctly improving. If no improvement takes place for a few days, in my opinion the surgeon should not hesitate to perform the radical operation.

(c) Cases which are certainly improving. These require careful watching, as they are sometimes most deceptive. Of this class Jacobson says: "There may be a mitigation of all and a complete disappearance of most of the symptoms, and yet during the period of their subsidence the diseased process has gone on steadily."

Mrs. M., aged 54, had had apparently a mild attack of appendicitis, the pulse never reaching 100, and the highest temperature 100.2° F., for a few hours only.

Patient was up and about, and only symptom remaining was some pain on deep pressure over McBurney's point. As patient had had several "passing" attacks of appendicitis and she was contemplating a sea voyage, I recommended an operation.

At the operation I found a distended and flaccid appendix which contained over a drachm of pus! Yet here we found pulse and temperature practically normal, and patient able to get about quite well without pain.

(iii) *The Late Operation.*—This is one performed after the formation of a well-defined abscess, or else undertaken for a spreading peritonitis. What anxious times we have experienced with these cases, gentlemen; and how we wished that we had been called in earlier.

Finney says of this class that "the presence of pus in an appendicitis case is *prima facie* evidence of a mistake on the part of somebody—the patient, the physician, or the surgeon"!

*Miss. T.'s Case.*—Repeated slight attacks, finally a severe one; doctor called in; sent on to me at once; deep-seated abscess; localized peritonitis. Rather protracted convalescence, owing to a hard concretion, which did not come away until one week after operation. Final result excellent.

(iv) *The Interval Operation.*—This operation is performed on a patient who has already had two or more attacks of appendicitis, and is performed while the patient is in apparently good health. To this class belongs the subacute cases. This is an operation that is practically safe. Lennander operated on 271 cases of this sort without a single death. Personally

I have operated on a large number falling under this head, and it is remarkable to find such a diversity in the position, size and state of the appendix. The last case I operated on of this division is still in hospital, but has done well and is now convalescent. It was rather an interesting one, as in addition to the appendicular mischief, we had found her to be suffering with a right cystic ovary. She had no pain or temperature, only slight tenderness on deep pressure over McBurney's point, and the pulse was normal. At the operation the appendix was covered with a meshwork of small but dilated blood-vessels, and was quite stiff and erect as though it had been composed of erectile tissue. The lumen was practically obliterated, and I could find no foreign body at all in the minute lumen. The ovary, of the size of an orange, was of course removed at the same time.

And now we come to the class of case which can only be described as *desperate*. Here the surgeon has simply to consider the advisability of "giving the patient a chance," and from personal experience, I would unhesitatingly say, unless the patient is really moribund, operate and give the patient a chance.

Van Lenné, in the *Hahnemann Medical Monthly* of January, 1898, quotes such a case: 'a child aged 12, sent to him with supposed tubercular peritonitis and so far gone that the operation was commenced almost without anæsthesia. On being opened pus poured out as from a geyser, and it was estimated that fully two gallons were evacuated. The abscess was bounded by the floor of the pelvis, the abdominal walls, the spine and the diaphragm. The patient made a surprising, though tedious recovery. One of my own cases was bad enough, but scarcely in the same state as this remarkable case.

Mr. M., aged 55, fat, unhealthy, alcoholic, two weeks' history, highest temperature 101.4° F., pulse had been 120, when I saw him 95, but he was evidently collapsed, sweating profusely, and looked very grey. Abdomen distended, marked rigidity on right side of abdomen, filthy tongue and foul breath. Advised

immediate operation. Appendix practically sloughed away, huge, intensely foul abscess, large quantities of fæces in abscess cavity, protracted but perfect recovery.

And now, finally, gentlemen, as to the operation itself—

(1) Freeing appendix, ligaturing base, resecting cuff of peritoneum, and burying stump under the cuff so formed. (2) With deep-seated abscesses, rather than open at once, place large drainage tube in site, and let abscess open of itself. (3) Invaginating stump of appendix into the cæcum. (4) When bound down, dividing at base, closing cæcum, cutting down on to it and dividing peritoneal and muscular coats, appendix can then be shelled out: or with very dense adhesions, after dividing base, it is slit open and mucosa removed. Lastly stitching appendix to abdominal wall and leaving a fistula.—*The Journal of the British Homœopathic Society*, July 1910.

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## REFUSE AND SEWER.

BY DR. BASANTA KUMAR GHOSH., L.M.S.

*(Communicated)*

The immediate removal of all refuse from dwellings is a matter of necessity and is a subject of paramount importance. The great prevalence of diseases in middle ages, can be traced to the barbarous and in-efficient modes of removal of sewage and it can be confidently stated as true that many diseases, prevailing in many large towns even in these days, are owing to the same cause.

Although the subject has been receiving the most careful attention of the sanitary experts in all parts of the Globe, the best method of doing so, applicable under all circumstances, can not be said as settled.

In very thinly populated countries, where excreta is a negligible quantity, little or no danger is apprehended, on the ground that such sewage matter at once returns to that great deodoriser—the soil—which being greatly fertilized rather gains a good deal of agricultural importance and thus becomes a benefit to man in the long run, not a danger. It is only in cases of large towns, that removal and disposal become a matter literally of life and death.

The refuse from dwellings may be conveniently classified under the following heads:—

1. Dust bin ashes: Kitchen waste and solid matters generally, other than solid excreta.\*
2. Excreta, consisting of urine and fæces.
3. House waste water, including waste water from kitchen and slop water or discharge from sinks, basins, baths, &c., and waste water from industrial processes.
4. Surface water due to rainfall.

The present systems of their removal may be divided under two principal heads:—

- Systems of removal.
1. The Water carriage system;
  - and 2. The dry system.



In the former, solid fæcal matters together with the liquid refuse from dwellings and other sources as stated above, are carried through a system of drains and sewers for final disposal.

In the latter, the solid matters such as dung, refuse food and street sweepings are removed by mechanical labour and the solid excreta consisting of fæces and urine are deposited in privies, dry closets or like contrivances, and are also removed by mechanical processes, as above.

As in both the systems, the solid refuse matters have to be stored up for a considerable time before removal, Solid refuse other than excreta. they should also receive a passing notice. They should be deposited at convenient hours in suitable receptacles, preferably made of galvanised iron and placed at convenient sites in streets, care being taken to prevent them from being a source of nuisance. They should be placed on cemented platforms, raised above the ground level and be provided with well-fitting metallic covers, as moisture hastens putrefaction of the contents. Notices in the form of hand bills should be freely and regularly distributed amongst the residents prohibiting the deposit of house refuse even in such places, except during certain hours only and with instructions to destroy the easily destructible matters, as are easily liable to decomposition, by fire at the end of each day. Such prohibitory orders should at all events be rigorously enforced. Steps should also be taken to expeditiously remove the contents.

A considerable nuisance arises at the time of loading a cart and the disturbance of the putrefying contents Scavenging Carts. gives rise to offensive gasses. The practice of carrying open carts fully loaded and through important public thoroughfares, allowing escapade of dust in windy weather or in the early hours of a pleasant morning when one gets out for a walk or a drive is extremely repugnant. Any one who ever had the misfortune of coming across a cart in a public street carrying car-casses in a state of commencing or advanced decomposition denounces and curses the authorities with all emphasis at their command in consequence of the most offensive emanations, pervading

the locality and contaminating the atmosphere. To minimize the nuisance of this nature, specially constructed carts provided with moveable and accurately fitting covers should be employed. Specially constructed motor vehicles are recommended as effecting a great saving of time and relieving people greatly of the discomfort in this regard.

The contents are disposed of, either by being deposited in waste grounds or being burnt in incinerators.

There is nothing to say against disposal on waste grounds when these are far away from towns and human habitations; but such lands being not always available, arrangement has to be made for depositing them at a safe distance from residential quarters. Such had been the practice even in the southern division of this great city, amidst endless difficulties. Even people who have not seen the light of the day and are ignorant of the most elementary principles of Sanitary Science, come forward with complaints of pests of flies, dust, abominable stench and what not from this cause. Be that as it may, such a procedure is wholly unacceptable at all events and should give way to the more sanitary method by destruction by fire.

The process of burning them in incinerators is decidedly better and more preferable as no nuisance is created. A small commercial importance is also attached to the residual clinkers for making mortar or paving slabs. The temperature in the furnace can also be utilized to generate steam for electric power, to pump sewage or to drive some mills.

In many towns, where conservancy system is still prevalent, different methods have been adopted for the collection of human excreta at home. The principal disadvantages are:—

Dry system and  
disadvantages.

1. Difficulty of obtaining strong earth and drying the requisite amount of earth for a considerable population.

2. Necessity for frequent removal and close supervision.

3. A very important objection in the fact that we are not in a position to say that the specific poisons of fœcal diseases, such as Cholera, Typhoid &c., are destroyed by dry earth.

The system also proceeds on a wrong principle, *viz.*, that of keeping excremental matters within or near residential houses longer than is desirable from sanitary point of view. Putrefaction is the result of an attack upon dead organic matter by bacteria, ever present in sewage and air. Under favourable conditions, these germs multiply with enormous rapidity and during this time a continual discharge of fœtid organic matter and offensive emanations take place and contaminate the atmosphere. This alone must seriously affect the health of the people and if this itself is not directly responsible for the production of the infectious diseases, there is no question but that it greatly favours their extension.

Attempts have been made from time to time to devise means so as to minimise the dangers of the conservancy system. Model Bye-laws have been framed by the local Government Board or a Municipal Corporation for gaining this end. All these may only serve to abate the nuisance by reducing the possible dangers of percolation and risk of pollution of the atmosphere from disturbances of the contents and so on. Even when such a system is carried out on most approved principles, it must of necessity be a source of nuisance, in the thickly-populated quarters.

In our country not even men of erudition and respectability do care to look after the sanitation of their homes and hearths. They manifest a most disgraceful indifference, refuse to believe, particularly when their pockets are touched, that their personal safety and comfort and the sanitation at home, go hand in hand. It is our daily experience seeing people throw Cholera and Typhoid stools in the privy receptacles before treating them with proper antiseptics—thus sowing the seeds of disease and death in a thickly populated quarter. They do not know what they do. Tell them the best method of disposal of such excreta,

and you are sure to be scoffed and held in ridicule. It is by no means certain that a great number of pathogenic bacteria are by this means not preserved, instead of destroyed, whereas we know from actual experiments that in the water carriage system numerous harmful bacteria are absolutely destroyed by soaking in water (Wynter Blyth).

The necessity for immediate removal being acknowledged, it is worth while to draw up a comparison between the water and dry methods.

1stly.—In the water method, the removal takes place, as it were, automatically, while in the dry method, such individual act of removal has to be carried out separately. There can be no doubt on which side the advantage lies in this regard.

2ndly.—The water system removes all sewage: not only excreta but all liquid waste and refuse matters as well. In the dry system only excreta are dealt with; the rest of the sewage remains to be carried off in another way, which must almost nearly be by water.

3rdly.—The water required for the purpose is already available—in the majority of cases—in the dwelling, where a supply of water is necessary. When it has been used, it must be removed. In its removal, it may as well be utilized to carry with it the excreta and all other sewage. What may be termed the potential energy resident in the water, conveyed to a dwelling, is available to carry the sewage matter from the dwelling.

4thly.—The necessity for removal being granted, the sooner this is effected, the better. In the water system properly arranged the removal is immediate and complete and in the dry system there must always be some delay, even if it be only for a short time.

From the four conditions it may be stated that as a general rule, the removal of sewage by water is preferable to its removal by any dry method. The great principle then to keep in view is the immediate and thorough removal of all refuse. The sooner therefore the faulty systems can be abandoned and replaced

by the water closet system the better and safer for the people and community. On the ground of expense also, it is found to be a mistake and were it not for the initial outlay that has been incurred, it is probable that most authorities who have adopted the Dry System, would have unhesitatingly abandoned it, as soon as practicable. Channels must exist at all events, for the conveyance of all the slop and sink water which has been used for domestic purposes, as also rain water away from the house. True for such purposes, surface channels do exist even in important cities, but experience has taught that such surface drains are utterly inapplicable for big towns, where their maintenance and supervision in addition to being a costly affair, are always productive of nuisance. House waste water together with liquid refuse or drainage from stables, cowsheds, slaughter houses, washings from street surfaces with urine from public urinals must pass through them, where they exist. They are highly charged with decomposable organic matters, emanating most offensive effluvia and are fruitful sources of various maladies. There is also great risk of contamination of all wells and tanks in the vicinity. They are thus positive dangers to public health.

For the sake of appearance and inoffensiveness, the custom and necessity have therefore been to place them underground. Many miles of them are sometimes constructed with great skill and science and they thus form in the subsoil of town, a vast network of tubes connecting every house and converging to a common outlet where the contents can be discharged. In these days of vast advancement in all matters relating to sanitary science it is considered impossible that any single large town or any large house can be efficiently freed of its waste waters without sewers.

In some towns sewers carry away none of the solid excreta. The controversy as to whether solid excreta ought to be allowed into the sewers is virtually practically settled by the general adoption of water closets which have not been superseded by any better means yet proposed.

*Sewer and Solid excreta.*

Channels must exist for the Conveyance of house waste and dirty water, &c., for final disposal, as already referred to. Experience has taught that such sewage is as foul as that of water-closetted towns, which contain solid excreta as well. The dirty water of sewer has to be disposed of in the same way. In every case, it is highly impure containing animal and vegetable substance in a state of commencing decay which passes most readily into putrefaction. The difficulty in the final disposal of sewage is felt in the case of foul water from houses and factories and without admixture of excreta, almost as much in the sewer water with excreta. The exclusion of excreta from sewers would not solve the problem and would hardly mitigate the difficulties. Such dirty waters might be discharged into streams but strong oppositions being raised against such a procedure, special legislation had to be enacted to prevent the nuisance

and dangers caused by such contamination and  
*In inland towns.*

this method of disposal had to be abandoned. The same channels also can be used with a little alteration for such excreta as well. It would then certainly be a waste of economy to allow the water to pass off, without applying the force which has been accumulated in it for another purpose.

It is also an important question whether rain water should be allowed into the sewers. In certain countries, the rainfall channels are quite separate from the sewers and the outfalls exist entirely in different directions, discharging their contents at convenient points into streams, forming the natural drainage bed of the locality. Mr. Ward's celebrated phrase "The rain to the river, and the sewage to the soil," is the principle of this plan. It is beyond the scope of this paper to enter into a discussion on the advantages and disadvantages of the separate and combined systems in full: but a review of them leaves no doubt that the disadvantages in no way counterbalance the advantages of a separate system.

The Calcutta maidan drainage has its many outlets in the Tolly's Nulla. This is partly underground running along the filled-up Marhatta ditch in Bhowanipur, and freely discharging

its contents into the Nulla. This carries only rain water and no sewage. Apart from this, in Calcutta we have a combined system of drainage. The principal objection to this in a place like Calcutta is that the rainfall here is generally *In Calcutta.* very high only during a few months in the year and weather is comparatively dry for the remaining months. The Sewers should necessarily be large enough to carry all storm water during the rains and they would run nearly empty in the dry season, resulting in a diminished flow with deposit of solid matters and necessitating frequent and copious flushing. But the sewers here are, however, only sufficiently large to carry  $\frac{1}{4}$  inch of rain per hour.

This is the main reason of submersion of streets and lanes even after an ordinarily heavy downpour. The Calcutta public have thus a mighty grievance, which they attribute to the faulty sewerage. The spectacle of submerged streets, of pedestrians in tidy costumes wading kneedeep in rain water, fashionable carriages with occupiers in rich garments and carts heavily loaded, all making frantic efforts in the busy streets of the city to speedily get to their destinations, is indeed a painful one and this is apt to create a widespread discontent. Happily, however, no time is lost, by men at the helm, in helping a speedy discharge of the stagnant water, and this state of things being only transitory, readily passes into oblivion as soon as the streets begin to emerge from underneath the sheet of water.

*(To be continued.)*

## EDITOR'S NOTES.

**Germs Carried in Clothing.**

Lieutenant Shackleton, who came so near to reaching the South Pole, in a lecture before the Middlesex Hospital Medical School, said that the members of the expedition never caught cold until they opened a bale of clothing that had been packed in England. The germs thus introduced caused the members who remained indoors after putting on the clothes to suffer from cold, while those who went into the open air did not. *The Post Graduate*, in reporting this incident, says that this corroborates the observation of others, and gives the instance of two hunters who suffered from influenza before starting on an expedition and although they had apparently recovered, gave the disease to nearly all the white men at a Hudson Bay post that they visited a long distance away, while many of the Indian traders who called were also afflicted.—*The North American Journal of Homœopathy*, June, 1910.

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**Kleptomania.**

H. L. Northrop, M. D., in the *New England Medical Gazette*, says that Kleptomania is common; the world is full of thieves. A desire to acquire is natural to everyone. Kleptomania implies a lack of control over this instinct, a morbid state of mind with an absence of controlling motives. This instinct to acquire is conspicuous in the animal, which, unless trained, lacks control over it. In man, the intellect and the will exercise more or less supervision over the love of possession. Gall, a world-wide authority on phrenology, observed that men given to stealing present a very prominent anterior temporal region, while Gall, Hollander and others reported many cases of kleptomania in all of which a pathological lesion involving the anterior part of the temporal lobe on one or the other, but usually the left side, existed, and was demonstrated either ante- or post-mortem. This temporo-sphenoidal lesion and kleptomania appeared to bear so direct relationship that Hollander concluded that "the temporo-sphenoidal lobes are in some way concerned with propensities common to man and the lower animals," while kleptomania, hunger and thirst are faculties associated with the anterior part of these temporo-sphenoidal lobes. Dr. Northrop then reports a case of a girl of thirteen, who was backward in development and with a pronounced tendency to kleptomania. He advised surgical measures, and upon shaving the head preparatory to operating a perceptible



fulness was observed above and in front of the left ear. Upon opening the skull a very irregular temporal fossa was exposed, with a deep indentation at the temporo-sphenoidal fissure. The depressed portion of bone over the anterior extremity of the temporal lobe, was removed and an unusually large amount of cerebro-spinal fluid was allowed to escape. The wound healed perfectly and although at the very first there seemed to be a tendency toward her old kleptomaniac tricks, after a few days the tendency disappeared and now, ten months after the operation, she seems perfectly cured.—*The North American Journal of Homœopathy*, June 1910.

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### Chemical Impossibilities.

In proprietary medicines chemical formulas are frequently used to indicate the chemical composition. While in the case of a definite chemical substance, such as phenacetin, the practice is a desirable one, there have been many instances of the misuse of chemical symbols for the purpose of lending an undeserved scientific appearance. At the recent annual meeting of the American Pharmaceutical Association, Mr. W. Puckner, of the laboratory of the council on chemistry of the American Medical Association, gave several interesting examples of this form of trickery, whereby certain products have been made to assume an atmosphere of respectability quite out of keeping with their true character. Another class of fake formulas which shows the inability of exploiters of a certain class of nostrums to tell the truth in a plausible way is that class which fails to obey the law of even atoms. Thus, a certain "cure" was said to contain "a new compound derived from a union of hydrocarbons" having the formula  $C_{27}H_{17}O_2$ . To a chemist such a formula is sufficient evidence of the nature of the stuff, for it is one of the many "chemical impossibilities" that have been, and are still, sold at a price greatly in excess of their actual cost. In devising an awe-inspiring chemical formula with which to embellish advertising matter it is a common performance to select one that is known but which cannot exist in the mixture which is stated to contain it. Rather, again, than acknowledge that their preparation differs from a horde of others only in name, some promoters have exercised considerable ingenuity in devising ways to make a claim of novelty appear true. In many cases the expedient has been adopted of adding together the formulas of the several constituents of a mixture, thus hiding the

nature of the preparation. This trick is often still further complicated by an error, intentional or accidental, in adding the formulas together. Another form of deception consists in assigning chemical formulas to impure substances. Thus a preparation containing two substances was given a chemical formula, which was only abandoned when it had been shown that the product did not contain the amount of one element required by the formula. It is possible that in some cases preparations are wrongly described through sheer ignorance rather than a desire to mislead the purchaser. But, whatever may be the cause, the evil is a common one, and it requires a considerable amount of chemical knowledge to detect the various guises in which deception may appear.—*The Lancet July, 2, 1910.*

### **The Unwashed Strawberry.**

Freshly peeled fruits are probably aseptic, and in this category may be included such familiar examples as the apple, pear, peach, apricot, orange, and banana. The peel in these instances has obviously no part in the dietetic quality of the fruit, and few persons, we imagine, are tempted to consume the protective coating; it has no attractive flavour, and it is commonly tough and indigestible. The strawberry, however, has on shield in the shape of a peel, and it would be very surprising if the fruit as it reaches the consumer was free from external taint, considering that it is peculiarly liable to contamination. It matters little under what conditions the banana or the orange is picked and packed, because before these fruits are consumed they are skinned and hence the impurities due to handling or to insanitary packing or environment are, to a great extent, removed with the peel, though we say this with reservation. The strawberry flourishes in a "bed"; it is within splashing distance of the fertilisers used to encourage its growth and maturity; it is picked by hands not necessarily under sanitary control; and, lastly, in transit it may easily encounter surroundings which need no bacteriological proof to show them as hygienically objectionable. The strawberry should certainly be washed; the process is simple and need not in recognisable degree detract from the highly esteemed characteristics of the fruit, while the small attention which washing involves may likely enough reap a great reward in averting a disaster to health. This injunction is not so absurd or superfluous as some may think, when it is considered how liable the strawberry is to contamination. Most cleanly disposed people if they visited the strawberry fields in full process of picking would soon regard

the washing of the strawberry before it came to the table or before they consumed it as imperative. Apart from the questionable cleanliness of the picker's person, it has to be remembered that the surface of the fruit is liable to be sticky, and therefore to hold on to any impurity with which it may come into contact. Further, the strawberry's exterior, in bacteriological parlance, affords an excellent nutritive or culture medium for organisms. "Never eat an unwashed strawberry" is therefore neither absurd nor unsound counsel, and those who think that to subject the fruit to such treatment would spoil its flavour are invited now, while strawberries are cheap and plentiful, to make the experiment.—The *Lancet*, July 2, 1910.

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### Overdosage in the Treatment of Tuberculosis.

Dr. A. K. Benedict in the *Therapeutic Gazette*, believes that the treatment of tuberculosis has been overdone. Firstly, he condemns serum therapy as applied to it, believing that it differs from the other diseases where this method of treatment has proved of value, in that phthisis is not self-limited, recovery brings no safeguard against another attack, and because he thinks that the use of tuberculin has failed to bring about cures and that its continued use is dangerous.

2. He condemns antiseptics, on the ground that not one of the drugs used has proved efficient and indeed the continued use of such drugs as guaiacol, arsenic and similar drugs have brought about positive harm.

3. Expectorants, sprays, etc., are of no benefit save as a means of euthanasia. The influence of most of the vegetable expectorants on the digestive organs is irritating and tends to depress nutrition. We should apply the principle of letting the diseased organ alone and apply the treatment to the general condition.

4. The writer does not believe in general medication, as nothing will "tone up" the system except food, and food that is assimilated. There is no such thing as a tonic or an alterative. He is convinced that meat, spinach and other vegetables contain all the iron needed. Iodine often increases the breaking down of tuberculosis tissues. Palliative measures and drug tinkering are out of place in tuberculosis.

5. Nourishment is often overdone, as the diet of the tuberculous patient may distend the stomach or produce fatigue by the frequency of meals. The consumptive needs ten per cent. more of assimilated nutriment than the non-tuberculous person similarly circumstanced.

As rest in the open air is now preferred to active exercise, he usually requires no excess over the standard ration. Overdose of one nutriment is likely to be associated with underdosage of another. Milk diet gives too much fat, and proteid, too little carbohydrate, and if he gets enough nutriment he gets too much water. Eggs contain no appreciable amount of carbohydrate. Raw egg-albumen will produce albuminuria, yet the patient is given a prescription for raw eggs. Alcohol increases the rapidity of the tuberculous process. Except for febrile cases which require much the same diet as typhoid, the tuberculous patient needs about the same diet range as the ordinary person in good health. His appetite may be tempted by well-cooked and daintily served food, but he will thrive best on well-assorted, ordinary foodstuffs.

6. Rest. The patient should not be unduly discouraged by feeling that every little movement or mental activity is beyond his strength. Perhaps he might as well die of tuberculosis as live a useless and idle life.

7. Climate. Probably any climate will suffice, provided the air be free from irritating materials, such as coal, soot, stone, or metal, and be not subject to sudden changes of humidity and temperature. It is a mistake to impoverish and worry the patient and drive him into the agonies of nostalgia, by insisting on a change of climate.

8. Fresh air. The term overdosage is particularly applicable to the insistence on continuous outdoor life without regard to wind, rain and excessive cold. It is difficult to understand why the consumptive must bear exposures which the healthy individual would avoid. Unless it be shown that constant breathing of cold air has some direct effect upon the bacillus or indirect effect upon the tissues or leucocytes, it seems questionable whether the conservation of bodily heat by clothing and rugs is superior to an artificially warmed but pure atmosphere. And it must also be questioned if it is advisable to almost totally suppress perspiration and dermal exhalation.—*The North American Journal of Homœopathy*, June 1910.

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### The Oldest Egyptian Mummy.

In an address delivered before the Royal Philosophical Society of Glasgow, on April 6th, an abstract of which has kindly been sent to us by the author, Professor Elliot Smith gives a sketch of the history of mummification in Egypt. To appreciate the motives which impelled the ancient Egyptians to invent the art of embalming, he says

it is necessary to throw our minds back nearly sixty centuries to a period long before the amalgamation of the kingdoms of Upper and Lower Egypt was effected and the first dynasty of Egypt founded (about 3400 B.C.). Then predynastic Egyptains were in the habit of burying their dead in shallow holes scraped in the soil immediately beyond the limits of the narrow strip of cultivated land. As the result of placing the body in hot dry sand, it frequently happened that, instead of undergoing a process of decay, it became desiccated and preserved in an incorrupted form for an indefinite time. The burial of valuable and useful objects with the dead naturally led to grave robbing, which was already common in the earliest known prehistoric times in Egypt. This plundering of graves must have taught the people at large that the forces of Nature were often sufficient to preserve a dead body. In this way it became a part of the religion of the Egyptians to regard the preservation of the body as the condition of the attainment of immortality; they believed that in addition to the soul (*Ba*) "which flew to the gods" there was a second soul (*Ka*) which remained on earth and dwelt in the body or in its neighbourhood. The predynastic Egyptains were acquainted with copper, and the development of their knowledge of the uses to which this metal might be put in fashioning tools gave a great impulse to the arts of the carpenter and stonemason. The increased technical skill thus acquired was at once applied to the invention of the coffin, the sarcophagus, and the rock-cut tomb. But the early Egyptains soon learnt that the body when placed in a coffin or buried in a rock tomb usually underwent decomposition. It was a widespread belief that the stone "ate the flesh"—hence the word *sarcophagus*. Artificial mummification, therefore, had its origin in an attempt to deprive the grave of its victory. The Egyptians had long been familiar with the materials used for embalming. Salt and soda occur in the deserts fringing the Nile Valley, ready at hand and in enormous quantities; and even in predynastic times the Egyptian woman had learnt to paint her face; resin, such as the embalmer then began to employ, entered into composition of these cosmetics. Professor Elliot Smith says that if this hypothesis as to the origin of mummification is correct, it might be expected that some evidence of embalming would be found soon after the invention of coffins and rock tombs—that is to say, about the beginning of the dynastic period. But he found, on examining the mummies in the Cairo Museum, that there was no unquestionably authentic mummy earlier than that of the last King of the seventeenth dynasty (about 1580

B.C.). There was thus a gap of eighteen centuries between the time when, on Professor Elliot Smith's hypothesis, the earliest attempts at embalming were made and the most ancient actual mummy in the Cairo Museum. There was, however, definite evidence that the embalmer's art was practised in Egypt as early as 2000 B.C., possibly even a thousand years before that time. Mummies were found at the Sakkara and Lisht Pyramids dating from the tenth or eleventh dynasties; these were so fragile that it was not possible to move them without reducing them to bones and powder. This seemed to explain why no actual mummies of this period were found in museums. But there is in the Museum of the Royal College of Surgeons of England a mummy of the time of Shefra (third or fourth dynasty) found by Professor Flinders Petrie in the neighbourhood of the Medum Pyramid in 1891. The researches which Dr. George A. Reisner has been carrying out at the Giza Pyramids have supplied data which demonstrate that this mummy was embalmed at time of the fifth dynasty (about 2700 B.C.). This is therefore more than eleven centuries older than any other actual mummy, that is to say, not mere bones, hitherto found, and Professor Elliot Smith thinks it highly probable that attempts at embalming were made during the six or seven centuries before the date assigned to the mummy in question, which is supposed to be that of a high official called Ranefer. The reason why this mummy has come down to our times in such a remarkably good state of preservation is that it was, encased in a hard and thick carapace of resinous paste which had been moulded, when soft, into the form of the body. The head, and face had been particularly well modelled; the wig was faithfully represented, and coloured brown with a resinous paste painted on the surface of the mask; the features (the nose is now destroyed) were carefully fashioned; the eyes (pupils, eyelids, and eyebrows) were indicated by malachite paint; and the moustache, represented in Egyptian statues only at the period assigned to this mummy, was painted on the upper lip of the mask with brown resinous paste like that employed to represent the hair of the wig.—The *British Medical Journal*, June 4, 1910.

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## Gleanings from Contemporary Literature.

### THE ALTERNATION OF REMEDIES IN THE PRACTICE OF HOMŒOPATHY.

BY J. MURRAY MOORE, M.D., F.R.G.S.

This year of grace, A.D. 1910, is the centenary of the publication of our earliest text-book of Homœopathy, Hahnemann's "ORGANUM OF THE RATIONAL SYSTEM OF MEDICINE."

It is useful at certain stages of our progress as practitioners of the art and professors of the science of homœopathy, which has now more than completed its first century, to consider how far, to what extent, and in what directions, we, of the twentieth century A.D., have advanced or developed the grand system of therapeutics handed down to us by three generations of earnest, industrious, and selfsacrificing medical men.

In my Presidential Address to the Congress of 1908, I pointed out some of the vast improvements in surgery, hygienics, anæsthetics, anti-toxin and anti-malaria agents, mechanical inventions, radio-active remedies, &c., and I warmly advocated the use of all these, as applied to the cure or alleviation of disease; but that address did not comprise any comments upon the actual homœopathic practice of the present day. Responding at very short notice to the urgent appeal of the Secretary of this section for a paper to fill the gap caused by the regrettable illness of Dr. Hervey Bodman, I propose to-night to examine into the origin and *rationale* of a practice which has grown up amongst us of giving medicines in pairs, instead of singly, commonly called "alternation."

A discussion upon this subject will not unsuitably follow Dr. David Ridpath's excellent paper upon "The Selection of the Remedy."

I would preface my criticism of "alternation" by stating my conviction that uniformity in the practice of all the followers of Hahnemann, and their homœopathic consistency, is greater than that of the practice of the so-called "orthodox" school, who do not embarrass themselves by adopting any *principle*. Our cohesion, therefore, on even debated subjects is greater than that of the dominant majority.

Assuming as an axiom that each homœopathic practitioner tries to select the *similimum* remedy for each case brought before him, most of us will admit that in the rush of dispensary work, and the hurry of a widely scattered private practice, it is not always possible to achieve this. And forty-four years' experience has taught me that searching a repertory in presence of the patient is not tactful. Patients usually assume that all the homœopathic remedies for all sorts of diseases are in one's mind, ready at call, and do not, as a rule, give one credit for careful and conscientious searching after the *similimum*. It is only the steady lay adherent of homœopathy, intelligent beyond the average—one who has tested and proved its efficacy—who appreciates the doctor's labour. As a sort of

"*Apologia pro vita mea homœopatica*," I should like to explain in the first place how I commenced this habit of "alternations."

Late in 1866, having become quite dissatisfied with my experience of allopathy, I succeeded Dr. Herbert Nankivell as House Surgeon of the Liverpool Homœopathic Dispensary. At once, with no preliminary training whatever (for my fair-minded father had expressly refrained from biasing my views while a student at Edinburgh, and had even advised my practising the old system, and taking my own course in life as to adopting the new system), I plunged into the task of prescribing for a crowd of patients at the rate of forty to fifty per hour, and of visiting others in the Liverpool slums, to the number of twenty-five to thirty per day.

With Hull's "*Jahr*," Hughes' "*Pharmaco-dynamics*," Thompson and Capper's "*Sixteen Principal Remedies*," and the kindly help of my honorary staff, I managed to work into the new therapeutics. Not having time to search out the simile for each case, I prescribed on a pathological basis of diagnosis, and gave remedies in alternation, because I could not always decide which of two or three remedies was the *similimum*. And I succeeded in curing or relieving a large proportion of cases. In fact, I found that the worst, most slipshod, inaccurate homœopathic treatment was better than the best allopathic medication of that day, for nearly all our dispensary patients had visited the ordinary hospitals and dispensaries without relief, before resorting to our institution. Our percentage of recoveries far exceeded that of the best hospital in Liverpool.

My younger colleagues, the stipendiary medical officers, Drs. O'Neill and Simmons, helped me much in prescribing; but they, too, more often used pairs than single remedies. Still, I gradually improved in the art of selection, and I find in a clinical note-book started in 1867, that between 1867 and 1871, out of 140 cases cured, 112 were treated by single remedies, given one at a time, and only 28 by alternating medicines. Two of those 28 were treated by different dilutions of the same medicine, given alternately. They were: (1) calc. carb. 6 and 11 in a case of marasmus from tuberculosis of the mesenteric glands; and (2) thuja 3 and 6, which in a short time completely removed syctic warts on the anus of an old man.

My chief instructor in the practice of homœopathy in those early days was, naturally, my worthy father, and he was an habitual alternator. His patients always had two glasses ready for him, and I remember that, sometimes, when acting as his *locum tenens*, some of them would be quite disappointed when I decided upon *one* remedy, instead of two. Dr. Hayward, sen., used pairs of medicines less often than my father, and Dr. Drysdale very seldom indeed. As far as I could trace results, all three eminent practitioners were equally successful in curing their patients.

The commonest and most successful alternations that I have used during my forty-four years of practice are the following:—

(1) In simple sore-throat, whether ulcerated or not, bell and mercurius sol.



(2) In tonsillitis, with fever and great soreness of the pharyngeal mucous membrane, bell. and baryta carbonica.

(3) In real diphtheria, bell. and mercurius biniod. (freshly made trituration, if obtainable). I reported a good case in the *Homœopathic World* for 1875, p. 346, where this pair of remedies in forty-eight hours completely removed the exudation from the whole of the left tonsil and part of the right, lowered the pulse-rate from 114 to 80, and made the patient feel well in himself. Bell. 3 cent. and mercurius bin. 3x trit., were the dilutions used. What better result could have been obtained by anti-toxin?

(4) Apis mel. and mercurius biniod. diphtheria.

(5) Cantharis 3 and mercurius biniod. 3x in diphtheria, with albuminous urine.

(6) Bell. and kali bichromicum in diphtheria of an ordinary, non-phagedænic character.

(7) Aconite and phosphorus in simple acute pneumonia.

(8) Aconite and bryonia in pleurisy, in acute rheumatism, and in peritonitis (idiopathic).

(9) Mercurius corrosivus and colocynth in dysentery, where the colic pains are a prominent feature.

(10) Aconite and pulsatilla in measles.

(11) Cannabis sativa and mercurius corrosivus in gonorrhœa, with a hard chancre; if with a soft (non-infectious) chancre, cannabis and mercurius sol.

(12) Nux vom. and carbo vegetabilis in some forms of chronic dyspepsia.

(13) Nux vom. and sulphur, the former usually given in the morning, and the latter at night, for chronic constipation.

(14) Arsenicum and veratrum album in some cases of diarrhœa, characterized by frequent watery stools, severe griping, relief after stool, and considerable debility.

(15) Iodine I cent. and veratrum viride Ix, given alternately every two hours in infantile acute meningitis (one case) I found effect a rapid and permanent cure.

(16) Ferrum metall. 1 or 3x, and pulsatilla 1 or 3x, in anæmic girls, with scanty and irregular menstruation.

I have always lengthened the intervals between the doses as soon as improvement began, and have ordered a single remedy (not necessarily one of the first pair) to finish off the cure.

I might mention here that our colleague, Dr. Samuel Philip Alexander, of Southsea, wrote an interesting article in the monthly *Homœopathic Review* for September, 1891, in which he alludes, though with apologies, to his own successful alternations of remedies. Of my No. 13 he says, "The stock treatment of piles with nux and sulphur . . . certainly seems to do more good than the employment of either of these drugs singly."

He goes on to quote three other successful alternations in his practice: "I have seen a case of acute rheumatism promptly cured—*mirabile dictu*—with bryonia and rhus tox.—given alternately! . . . . That two such antagonistic drugs, thrown into the system together, should effect a cure is only to be explained on the principle of the 'survival of the fittest'; the disease selects its own *similimum*, and discards everything else. . . . I can recall at least two cures in my own practice, following upon the alternation of drugs. . . . One was a case of chronic gastro-enteritis, the principal symptoms being vomiting and diarrhœa after food, with burning pain in the stomach, and severe colic. . . . Arsenicum and colocynth were given in alternation, and the man who had suffered for months was well in a few days.

"The second case was somewhat similar, in a lady. . . but recent, and typhoid in character, and attended with liver symptoms. Baptisia doing no good, I hesitated between merc. sol. and veratrum album, but finally gave the two in alternation, with immediate and complete success."

Now, I am pleased to be able to quote the evidence of this excellent clinician, the brother of an ex-President of our Society, in support of alternation though, for brevity, I have omitted his deprecatory remarks thereupon. For I *know* alternation to be successful in ordinary, every day practice, even while I admit that is unscientific. Although I begun as early as the year 1868 to report cases cured (in the *Homœopathic World*). I have refrained all my life from reporting in print cases cured by alternating medicines, because colleagues could not derive any *definite* information from them, as an assistance in the treatment of other similar cases. Hence scores of cases that I considered "good homœopathic cures" have not been published. No doubt this feeling is shared by many colleagues.

Now it becomes us to enquire whether the practice of alternation is justified, excused, or condemned in the "Organon," which Dr. David Ridpath has truly styled "The Bible of Homœopathy." guided by more mature experience, I can now endorse Dr. Ridpath's statement. "A knowledge of the principles contained in the 'Organon' is necessary to the successful practice of homœopathy." Yet in my homœopathic student days the "Organon" was not studied by any of us, except two, perhaps three, who became high dilutionists.

The *general teaching* of the "Organon" is plainly as much opposed to alternation of medicines as it is to unnecessarily frequent repetition of doses of the one selected remedy.

Section 189 (p. 139 of "Dudgeon's Trans.") runs thus: "If, on the first examination of a disease, and the first selection of a medicine, we should find that the totality of the symptoms of a disease would not be sufficiently covered by the disease—elements of a single medicine—owing to the insufficient number of known medicines, but that two medicines contend for the preference in point of appropriateness, one of which is more homœopathically suitable for one part, the other for another part

of the symptoms of the disease, it is not advisable after the employment of the more suitable of the two . . . to administer the other without fresh examination. For the medicine that seemed to be the next best might not, under the change of circumstances that has in the meantime taken place, be suitable for the rest of the symptoms that then remain in which case consequently, a more appropriate homœopathic remedy must be selected in place of the second medicine, for the set of symptoms as they appear on a new inspection."

In a note to section 272 (p.187), which runs: "In no case is it requisite to administer more than one single, simple medicinal substance at one time," Hahnemann writes: "Some homœopathists have made the experiment in cases where they deemed one remedy homœopathically suitable for one portion of the symptoms of a case of disease, and a second for another portion, of administering both remedies at the same or almost at the same time; but I earnestly deprecate such a hazardous experiment, which can never be necessary, though it may sometimes seem to be of use."

At this period homœopathy was still in the experimental stage as regards new remedies, and both Lutze and Ægidi had proposed to mix two apparently suitable medicines and give the combination, a sad relapse to the polypharmacy of the old school from which they had emancipated themselves.

In section 270 of the *first three editions* of the "Organon," however, we find the following sanction for occasional alternation: "When, therefore, a thoroughly suitable specific (homœopathic) remedy cannot at once be found, on account of the deficiency of medicines whose pure effects have been ascertained, there will usually be one or two next best medicines for the characteristic original symptoms of the disease, one or other of which—according to the morbid state in each case—may be useful as an intercurrent remedy, so that its administration in alternation with the chief medicine promotes the recovery much more palpably than giving only the chief medicine . . . two or three times in succession." (The italics are my own.)

This section, perhaps because it afforded an excuse for the practice of alternation, condemned by Hahnemann's note to section 272 above quoted, was omitted in the fourth and fifth editions of the "Organon."

According to Dr. Croserio, of Paris, an intimate colleague of Hahnemann, the Master "never prescribed two different remedies to be taken alternately, or one after another. He would always first learn the effects of one remedy before he gave another, even in patients who were treated by him at two hundred leagues distance." (Letter to Dr. von Bönninghausen, 4th American edition of "Organon," in note to section 272.)

Notwithstanding this statement by Croserio, Hahnemann advised alternations in certain diseases, characterized by alternating morbid states, and "became an *a priori* prescriber of successions," as Hughes terms it.

In purpura miliaris, he advises the alternation of "aconite and coffee, one or other being given, according to the indications, every twelve, sixteen;

or twenty-four hours. Of cholera he writes: "The best homœopathic practitioners have found *cuprum* indispensable in the second change of the fully developed disease, *alternated*, if the symptoms indicate this, with *veratrum album*. I have also advised the alternation of these two substances from week to week as a preventive against the disease." He says, further, that *bryonia*, alternately with *rhus tox.*, proves of eminent service in post-choleraic fever.

In treating croup, Hahnemann tells us always to precede *spongia* by *aconite*, and to follow it up sometimes by *hepar sulphuris*. Von Bönninghausen, "who," said the Master (note to section 235) "has rendered more services to our beneficent system of medicine than any other of my disciples," built upon this therapeutic suggestion a system of giving to all cases of croup five powders in succession—*aconite*, *spongia*, *hepar*, *spongia*, *hepar*, and no more medicine afterwards.

In complicated chronic diseases, the second edition of the "Organon" advises mercury and sulphur when syphilis and *psora cœiucide*, and the third edition recommends mercury, assisted by *thuja* or nitric acid, when *sycosis* is also present.

Among Hahnemann's foremost disciples who alternated remedies were Gross, Rummel Hartmann, Hirsch, and Hering. Occasional alternation has been ably defended by our own Drysdale and Russell, and by Drs. Martiny and Bernard, of Belgium, while it was as ably attacked by Carroll Dunham.

It was shrewdly pointed out by Jahr, in his "Therapeutic Guide" (1870), alternation "renders all rigidly correct observations impossible. I remind the reader of Dr. Kallenbach's observation, who gave his diphtheria patients at The Hague at *first apis* and *lachesis* in alternation, but afterwards, when he wished to find out which of these two remedies really effected the cure, saw those to whom he gave *apis* alone recover in three days instead of in five under the alternation, whereas those who received *lachesis* alone did not improve at all."

I do not suppose that any of us, with the greater knowledge of drug action, and perhaps better acquaintance with pathological processes than existed thirty years ago, would counterance the absurd recommendation by Constantine Hering in an article in the *North American Journal of Homœopathy* for August, 1879, to give *colocynth* alternately, with strong coffee in some forms of colic. Nor would his other eccentric advice, in the same article, be followed at the present day—namely, that in any case where great pain is present we may administer opiates in alternation with the specific homœopathic remedy.

The main arguments in favour of alternating remedies are these:—

(1) The practical advantage of saving time to the busy man and the promptitude of relief to the patient in acute diseases.

(2) Assuming that the two remedies chosen are *not* homœopathic *antidotes*—and this condition of alternation must be absolute—the second remedy may revive the susceptibility of the tissue, organ, or bioplasm;

which would otherwise tend to be exhausted (Drysdale). Dr. Drysdale illustrates this by the laws of the reaction of the retina to certain colours.

(3) As even specific morbid processes, such as typhus fever and variola, may, though rarely, concur in the same individual, much disease is complex in character and needs more than one remedy, with its destructive processes (R. Russell). As it is against all homœopathic rules to give more than one medicine at a time, we give a pair by turns, at rational intervals, and enhance our healing power.

(4) The medicines alternated act as useful auxiliaries, assisting each other; or as correctives of each other; or by drawing out in various ways the reactions of the organism to make them converge to a cure (Martiny, Bernard).

(5) In definite diseases the presence of urgent complications is better met by alternations than by change of remedy (Richard Hughes).

(6) As certain drugs specifically effect certain tissues, it is a decided advantage to use two remedies, each of which act directly upon the morbid process in each different tissue.

For example, it is rational to suppose that when we give bell. and merc. sol. alternately in a case of ulcerated sore-throat (cynanche tonsillaris) belladonna reduces the swelling of the congested capillaries of the mucous and submucous membranes, while mercurius "alters"—to use an allopathic phrase—the ulcerated surface towards normal condition.

Similarly, the rapid cures I have often witnessed of quinsy, even when far advanced, are explicable by the action of belladonna, as aforesaid; and of the baryta carbonica specifically upon the glandular substance of the tonsil itself.

Also I can explain to my own satisfaction, though perhaps not to that of my colleagues, that in the nux and sulphur treatment of piles, constipation and cold feet, nux vomica stimulates the vermicular movement of the intestines through the *par vagum* and the sympathetic, while sulphur promotes the activity of the languid venous capillary circulation, and of the hæmorrhoidal veins.

In the treatment of chronic diseases, of which the major part of my practice in Leamington consists, I have almost given up alternation, because the diseases are of a definite fixed type; and, if complicated, then I take up each complication separately, matching it by a well-thought-out remedy, and following Hahnemann's direction to treat the latest symptom first.

My own conclusions upon alternation are these:—

(1) Alternation is not scientific homœopathy.

(2) Alternation is often very effective, and is legitimate to a homœopath.

(3) A case successfully treated by alternate remedies and reported in paper or journal affords no instruction to the colleagues of the writer.

I hope that this hastily written paper gives some material for a discussion, though I can hardly hope for such a full and interesting one as was reported on the subject of "The Selection of the Remedy."

Dr. STONHAM thought the question of alternation was one which had come before every homœopath in his practice, and probably every practitioner had alternated, at any rate, on some occasions. Dr. Moore had given what the members would not have found out themselves, namely, the history of the subject and the opinions of various eminent homœopaths on the question. He himself had no idea that the point had been discussed so profusely. Though the practice of alternation was said to be unscientific, yet good results were obtained from it, and the question arose, could a practice which had good results be really unscientific? The reason of the good results of alternating remedies was not known. He thought probably that diseases were not entities, at any rate in many cases, and that the body might get diseased in two different manners at the same time. If it did there was no reason that he could see why two different remedies should not be used at the same time. Of course practitioners had to be very careful that the two remedies used were not antagonistic remedies. For instance, one would not use causticum and phosphorus at the same time, and, with regard to the instance given by the author of the paper, one would hardly give apis and lachesis together; they were direct antidotes, and it was not surprising, in the case mentioned by the author, that when one of those remedies was discontinued the case got cured much more quickly. If any practitioner could say why alternation was successful he was sure the Society would be greatly indebted to him.

Dr. WHEELER said he thought it was true that the better one knew his *Materia Medica* the less need one had of alternation. It was quite conceivable, however, that two unrelated diseased processes might be present in the same body at the same time, and therefore it was not impossible that two remedies with different spheres of action were able to act upon the body simultaneously. With regard to the question as to why alternating remedies succeeded, when only one disease process was present—and observations would have to be accumulated continuously before any definite law was arrived at—his own personal feeling about it was that the explanation probably lay in the undoubted enhanced power of one remedy when it was following another. He would certainly require a great deal of evidence to convince him that the action of *nux vomica* was not a better one when it followed sulphur than when it was given by itself. For instance, if he thought a case was one for *nux* he often gave a few doses of sulphur first, and he found many instances of remedies being related somewhat in that manner. He preferred not to alternate remedies, but to give the one which went the deeper first, preparing as it were the way for the other, although the one that he gave first might not be the best indicated by the actual symptoms. It was very interesting to notice in homœopathic practice that men practising without any particular communication with one another tended to use certain pairs of remedies as the result of experience. The combination of *belladonna* and *mercurius*, for instance, had become almost traditional, and undoubtedly, it depended upon a real relation between those two drugs.

Homœopaths had to wait to find out what that relation was but that there was a relation he firmly believed. He did not go so far as the author in saying that no case cured by alternating remedies was worth publishing. On the contrary, he thought it would stimulate research, and if a great many cases were accumulated some of the laws which undoubtedly governed the drugs, action would be discovered.

Dr. EADIE confessed he had been guilty of alternating, but he did not defend the practice; he thought it was a sin, the sin of ignorance. He himself was perfectly convinced that if one discovered the one remedy which would cure a case it was much better than any two. The practice of alternating, he thought, was unscientific. He did not think the arguments which Dr. Stonham had brought forward, as to its being scientific, were tenable. He (Dr. Eadie) thought to a great extent a good deal depended on what view one took of disease. Disease was not an entity. What we had to deal with was diseased bodies—one could not separate them and say "Here is the disease, there is the body"—although it was convenient to talk of them as if they were separate entities. To treat a patient, say, with typhoid fever, pneumonia and whitlow with different drugs for these different conditions was to overlook one of the fundamental points of homœopathy—the totality of the symptoms.

Dr. MILLER NEATBY thought alternating was very largely a matter of tradition and that one practitioner had copied it from another. For instance, those who were brought up in homœopathic hospitals fell into the ways that obtained amongst their seniors. Thus in the hospital in which they were gathered that evening appendicitis used to be regularly treated at the outset with an alternation of belladonna and mercurius cor., and acute rheumatism with aconite and bryonia; one got into the way of adopting these formulæ which one derived from tradition from one's elders. He thought really that was the history to a large extent of alternation and the mere fact that good results were obtained from it did not prove it to be strictly a scientific method. Alternation, however, was undoubtedly often useful, and most homœopaths would agree with the author when he said that even crude homœopathy of that kind—the alternation of remedies—produced better results than anything under the old school. But he (Dr. Miller Neatby) did not look upon the process of the alternation of remedies as a scientific one; the truly scientific method would surely be the one that gave the best results, and not the second best results. From his own experience he could very heartily endorse what Dr. Wheeler had said, that certain remedies given in succession, that is, one remedy given after some other particular remedy, might produce a very much better effect than if the indicated remedy was first given. But that was not alternation; it was an entirely different thing. In a case of piles, where nux was indicated, the nux would often do much better if sulphur were given first. A few weeks ago he saw a case of rheumatoid arthritis which seemed to require rhus, but as it was the first time he had seen the case he hesitated and decided eventually to give

sulphur to begin with. When the patient returned the first time, there did not appear to be very much difference, but he then gave the patient the rhus, and the next time the patient came back—that very afternoon as it happened—he was very much better indeed. He was rather interested in the case, because, in one or two previous cases he found that rhus when apparently well indicated had not acted when given alone. He thought the reason why two remedies given in alternation would often produce good results must surely be that they were remedies which produced very similar symptoms. He felt, however, from his limited experience, that the policy of giving the single remedy and seeing what effect it produced was a better method than that of alternating.

Dr. PULLAR thought the Society was extremely obliged to the author for bringing such a practical subject before them, and he (Dr. Pullar) thought the observations confirmed the experience of most practitioners. Of course the ideal to be aimed at was that of Hahnemann—to give full study to a case and give one remedy. But in this workaday world a practitioner had to some extent to yield to considerations of time, and very often, as a matter of everyday experience, it was found that excellent results were obtained from alternation; although, personally, he resorted to such lines with a feeling that he was hardly thus attaining the perfect way. He himself sometimes alternated remedies day by day instead of by doses; for instance, in sore throat, if one remedy was indicated by the tissue conditions, such as baryta carb. for the infiltration of the tonsils, he gave that medicine and belladonna (for the congestion) on alternate days. The pathological examination, of course, existed only in our own minds, remedies being prescribed more on symptomology than on theories concerning the structure that was being acted upon by them. As a matter of experience, he had found that the method of prescribing two different remedies on alternate days seemed to answer better than alternation of doses. He thought with the last speaker that there was perhaps a good deal of tradition in the matter of alternation of remedies; but this may have risen from the experience that the action of one remedy emphasized that of the other when given alternately with it. Whatever the explanation was, there could be no doubt that the results of alternation were such as to render the practice by no means indefensible. Of course, we must look upon Hahnemann's instruction as, in some respects, a counsel of perfection, and in the ordinary round of work it was, indeed, almost impracticable because it involved so much time. When all was said and done, too, the standard of therapeutic efficiency attained in the average practice of our method was a very much higher one than that of the old school. If a practitioner was going to work on the precise lines of Hahnemann he might do brilliant things, but every case had to be thoroughly individualized, and this meant a deal of time. There, however, we had a special development of knowledge, an ideal phase of medicinal treatment, which was of the utmost value in chronic disease: it was definite and far-reaching in its



results, and if a practitioner carried out the method accurately, results were achieved such as no other therapeutic system could show.

Dr. ROBERSON DAY remarked that until the last two speakers had given their views the members had been listening to speeches of gentlemen apologizing for what all knew to be a very useful method of prescribing. It was called "unscientific," and not "pure homœopathy;" but how could it be proved that such a practice was not scientific? And if it was not homœopathic, what was it? At any rate they knew it was for the good of the patient, and practitioners must ever keep before them the interests of the patient as being paramount, and whilst they had that end in view he was sure they would always employ the alternation of remedies. A method of alternating which he adopted and with which he was very satisfied, was prescribing for a *constitutional* state by an occasional remedy, at the same time treating the *acute condition* by some other remedy which was indicated. He might instance the working of tuberculinum, which acted so well as a constitutional remedy, whilst treating the more active disease by its appropriate remedy, in the same way syphilinum, psorinum, and the well-known cessation of treatment for a course of sulphur. All that treatment was a form of alternation, and if he did not adopt it he was afraid he should not have the successes which he did have.

Dr. COOPER said that no greater objection could be raised to the alternation of remedies than that such a practice necessarily rendered all accurate observation of the actions of the remedies employed impossible. Every homœopath had the opportunity of making observation on drug-action in the course of daily practice, when he prescribed one remedy at a time, and the knowledge so gained was of the greatest value for future use, not only to himself, but to others. In this way it was often possible to find new indications for the employment of a remedy. He did not consider Dr. Day's remarks on the giving of constitutional nosodal remedies, in conjunction with other drugs, as coming under the head of alternation of remedies dealt with by Dr. Murray Moore. Such a practice was, in every way, justifiable, for he had himself often found a well-indicated drug fail to act till some constitutional remedy, such as tuberculinum or syphilinum, was given. This latter had the power of clearing the ground and removing the obstruction which previously interfered with the action of the original drug. He thought, as years went on, the practice of alternation would gradually die out, and homœopaths would rely more on the action of one remedy given at a time, and that the tendency would be towards allowing more time for each individual dose to act than had otherwise been the prevailing practice.

Dr. E. A. NEATBY remarked there was one line of possible explanation of the action of alternating remedies which had not been referred to and which he would like to remark on, mentioning an analogy and suggesting that on similar lines some explanation might possibly be found. In modern bacterial treatment it was quite well known that resisting power of a patient to more micro-organisms than one at the same time might be

low, and that in order to improve the patient's condition a vaccine must be used, prepared from both organisms, such for instance as the streptococcus or the staphylococcus. He did not see why if that was true, drugs, if they were given in alternation more or less deliberate, should rouse different tissues or cells in the body, and act in the same way as they knew a bacterial vaccine would act. With regard to one instance that the author quoted as being a successful instance of practical alternation, namely, the celebrated Bœninghausen powders, years ago he (Dr. Neathy) used those powders very frequently with great success. He used them usually in fairly high dilutions, 12 or 30. Those five magical powders did wonders in simple laryngitis and spasmodic croup, sometimes very trying cases in children.

Dr. WEIR, referring to the question of the single remedy *versus* alternation, mentioned a case of sore throat in the hospital for which the physicians had suggested belladonna and mercurius cor. He asked to be allowed to treat the case, and he prescribed lycopodium 1,000, one dose, and in twenty-four hours the patient was cured. What homœopaths wanted to do was to improve their knowledge of the *Materia Medica*. It was his opinion that if one studied the *Materia Medica* it would be found that the single remedy would give much better results than alternating.

Dr. MURRAY MOORE, in reply, said that homœopaths of the present day ought to remember, in justice to themselves, that the growth of their *Materia Medica* had been enormous, the reason being that there was a principle by which they could utilize the poisonous effects of any substance—animal, vegetable, or mineral. As illustrating the enlargement of our *Materia Medica* continually going on, he quoted a case of poisoning by *Primula obconica*, which is now the homœopathic remedy. The patient, a gardener, had been to three doctors of the highest eminence in Leamington, and none of them could detect the origin of the eczema. He (Dr. Moore) discovered it by having learnt the poisonous properties of the plant from an article in the *Homœopathic World* for 1906. He obtained the antidote (he thought it was anacardium), and as soon as ever the patient came under homœopathy he began to improve. No local application whatever was used. The man recovered in five weeks. This gardener had never had the slightest disease of any kind before his duties compelled him to tend about thirteen of these plants, thus slowly imbibing a quantity of the injurious effluvia of the leaves and blooms. He (Dr. Moore) drew attention to the fact that the latest edition of Dr. Boericke's *Materia Medica* contained 1,070 remedies, as compared with the twenty-three that Hahnemann published in his first volume. That was what their science had grown up to. Homœopaths aimed at perfection in their practice, but life was too short to attain it. He was obliged to Dr. Burford for mentioning the fact that Professor Henderson had introduced alternation into this country, because he had seen in an old number of the *British Journal of Homœopathy* that very expression—"Professor Henderson's Alterna-

tions"—showing that that gentleman was the originator, or one of the originators of the practice. All the foremost men of our school, in the days when he (Dr. Moore) was learning homœopathy, used alternation at times. Professor Henderson was remarkably successful with alternations. When a student, he (Dr. Moore) caught diphtheria from a patient in the Edinburgh Infirmary, and was very ill with it. His father had advised him to call in Professor Henderson if there was anything the matter ; he did so, and Professor Henderson cured him in a few days. Of course he was curious to know what the Professor had used, and it turned out to be belladonna and mercurius biniodatus in alternation. The practice of alternation, as Dr. Burford had truly said, was dying out ; it was not as much used now as it was twenty or thirty years ago ; and was a very good thing, too, because homœopaths did not learn anything definite from it. He did not agree with the speaker who advised that cases treated by alternating remedies should be reported because something could be learnt from them. Another thing which he had learnt in his old age was the value of the infrequent dose. He did not say that only unit doses should be used in acute cases of a destructive character, and in cases attended with great pain ; but in cases where there was plenty of time—say, in cases of stiff rheumatic joints—he thought if a practitioner gave a dose and allowed it to act for a week he would obtain better results than by giving the dose three times a day. There was no doubt that one of Hahnemann's great discoveries was that a dose of a drug would act for some time after it was given—in some cases thirty-six days. He thought that in these days of precisionized homœopathy it was every homœopath's duty to study the effect of unit doses. He had learnt very much from Dr. Cooper's father in that way. No doubt that gentleman used unproved remedies (for who had ever proved *agrophis*, *arbutus*, or *lemna minor* ?), but by his remarkable intuition in selecting the right remedy the late Dr. Cooper had been successful both in curing patients quickly and in enlarging our resources. He thanked the members for discussing the paper in the full and frank way they had, and he felt it a compliment to be asked to come from Leamington—a hundred miles from town—to read paper. *The Journal of the British Homœopathic Society*, April, 1910.

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Vol. xxix.]      September, 1910.      [No. 9.

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THE TRUE AND THE FALSE IN MEDICINE.

BY ERASTUS R. ELLIS, M.D., OF DETROIT, MICH.

*Formerly Professor of Surgery in the Detroit  
Homeopathic College.*

In a recent number of your Journal, I was gratified to see an editorial under the head of "The Hatred of New Ideas in Medicine," of which the following is an extract: "The essential motives for this are prejudice, selfishness and indolence, the arch enemies of all progress, and there are cases on record, in the history of medicine, in which this had developed to such a degree that men of science, of exalted position, lost the sense of truth and honor and degraded themselves by the employment of unworthy means in order to suppress a new idea and descend to intrigue against those who had promulgated a new truth and driven to insanity by the opposition of those in their profession whose true interests they sought to serve."

Such expressions as the above, from an old and able medical journal, leads me to believe that 57 years in the continuous study and practice of medicine might, and ought, to enable me to offer some ideas and suggestions on the healing art which would be acceptable to your columns and possibly to some of

your readers, especially as medicine is largely based on actual experience of its disciples, and as I have some positive views thereon. Medicine is a profound subject and it is of the greatest value to mankind to ascertain if it be true or false and to what degree of each, or either, this may be the fact.

Medicine is of ancient origin, commonly called a Science. Now, anything to be truly a science should comply fully with this definition :

“ Science is *Knowledge*, reduced to order and so classified and arranged as to be easily understood and readily applied to the uses of life.”

If we will always keep in mind this brief but comprehensive definition and apply it to every subject, old or new, which comes before us we will not be unduly influenced by old theories or any of the numerous new fads and follies which spring up and challenge our attention almost daily. Scores of these are thrust upon us under the euphonious and much-abused term of “ Science.” All such should be subjected to the above rigid test before adoption if we would avoid error and embarrassment.

The doctor's vocation is a sphere unlike that of, or to a greater extent than that of, any other phase of human experience. He has constantly to deal with that mysterious but universal principle called *Life*. Just what this is a matter of much obscurity, but it is important to know as much of it as is within our scope of knowledge.

We may assume, without dispute, that there is *one only life*, which pervades, and is the life of the universe and all things in it, the *Divine Life*, the one source of all power and intelligence. As intelligence implies a personality or Being, it follows that He is the uncreated and author of all creation. All the forms of life, whether man, animals or plants, derive their seeming life from Him. From the worm in the dust to the most gorgeous plants and animals to Man this life is imparted, flows in and is received in each according to the *form* which receives

it, and the seed, egg and ovum have no life in themselves, but under favorable conditions, generally of heat and moisture, the life principle flows in and is developed in accordance with the form, before inanimate, which receives it.

We generally suppose that life is caused by heat and moisture, but these alone without the infinite life force operating as a superior element, cause disintegration and decay. In its *essence* life is Infinite and beyond the comprehension of the finite. Some modern, so-called "scientists" believe that they can discover, expose, and smoke out the infinite by laboratory work, and after years of failure still claim that they are near the point of success. Moses, the wisest of men, desired this, and was directed to go to a cleft in the rock where he could see His back as He passed by, a very delicate but effectual way of saying that all man can know of the Infinite, is what he can see and learn from *His works* in the great worlds of the universe, ample evidence of which is all around us. It is a gratification to know that therein is an unlimited field for the exercise of all man's powers.

To the physician a knowledge of the life principle, as it is manifested in the human subject, is of the utmost value. While we cannot divine its *exact* nature, we can learn much of its operation and aid in its regulation and control in restoration to health when by any means there is a departure from the normal standard.

A noted philanthropist says that "Life is a struggle." The man whose business affairs worried him declared that "Life, all the time, was one d— thing, or *another*."

For the purpose of this article we shall claim that *Life is a Series of Resistances*. That resistance is the salient feature in all existence is a most evident fact. With this view and the close observance of it only, can the physician deal with his patient successfully and make his services beneficent. If he ignores and goes contrary to it he is a dangerous element in

the sick room. It is of the utmost importance to know whether the doctor by his art can aid the patient to recover his health and prolong his life, or the opposite. His profession is in the affirmative, the fact may be, and often is, in the negative. That the practice of medicine as an art is very fallacious is evident to all and has been from all time.

As a theory I shall endeavor to make it clear that, to a great extent it is false, and hence that its practice must often be a failure. That such is the general opinion of mankind is manifest to all. The world judges by results and it is clear that in medicine, professions and practical results are very dissimilar. From time immemorial the doctor and his trade have been the butt and ridicule of all. No end of jibes, jeers and slurs have passed him. Few have faith in his art, yet, when sick, will seldom fail to send for him, not knowing where else to turn, and it is often pathetic to see how much more such a person's faith and reliance is in the doctor than on his Creator. So entrenched in the affections of mankind is this great profession.

Death reaps a great harvest from all ages and conditions of life. If medicine is what it professes to be and should be, a *healing* art, why is this? Let us inquire. It has somewhat of a history since Hipocrates 2300 years ago and all down the dark ages to the present time it has undergone very little change. Its fundamental principle is false, that disease is something to be *fought*, to be knocked out, to be antidoted by drugs and poisons, the emblems of which were the skull and crossbones, the dragon and viper still seen on the pestle and mortar of the druggist and the prescription of the physician, and it is a common expression, meant to be complimentary to the doctor, that "He made a heroic *fight* to conquer the disease."

More recently the "germ theory," the rap sheaf of this folly, has captivated the whole medical world, with the same

idea that disease was something to be killed. From early times medical practice has, consisted of six well-defined procedures, bleeding and blistering, pukes and purges, stimulants and sedatives. The first three of these are now out of date, the last three are in full force and no sick person, child or adult, male or female, is treated without resort to one or all of them. Every case is begun with a purgative, generally calomel, which for 50 years or more went out of use owing to its destructive action on the teeth and bones as well as other tissues. Again every case is now begun or ends with this drug. Its being tasteless overcomes one objection most people have for it. The doctor explains to the patient that he is bilious and when the poison brings away slimy and bloody discharges he is surprised that he was "so very bilious" and thinks his doctor very wise. The fact is the purge acts upon the intestines by reason of its being meaner and more irritating than the natural contents of the bowels. The doctor has given him a temporary diarrhea, or more likely dysentery, reduced his strength, and if he had any real disease, or on the point of coming down with one, his case is complicated and surely made worse. The effect of any cathartic is most unnatural and the relief which it affords is only temporary and followed by more constipation. It may be resorted to occasionally, but if repeated with frequency its effect is injurious and ruinous, its action is a violation of that great and eternal law inherent in every living thing, that of *resistance* and *reaction* following every unnatural action. Nature always kicks and goes the opposite way, so that after a cathartic the constipation is worse. Its direct action may be for a day, but the reaction lasts for a week. This is well known, but all doctors still continue the use of cathartics. Of all the scores, if not hundreds of cathartic pills on the market, and new ones coming out almost monthly, each one, in succession claims to be different from and condemns all preceding ones and we are assured "that *this* will not increase constipation," "*this* has no bad reaction," etc. If one pill acts on first dose it

will take two next time, and more later until the bowels cease to act or a chronic diarrhea or dysentery is the result. Nature will not long endure such a method for thus her reaction and resistance is destroyed. The better way is to use an enema but if this is resorted to a few times the bowels will lose all natural action; nature will lay down and do nothing if she is helped too often by artificial means. No case of chronic constipation was ever cured by cathartics. The person who tries this method will become more and more constipated and "bilious." His blood will be poisoned and impoverished and skin covered with pimples and wrinkles. The victims of this kind of practice may be seen everywhere and known by their shuffling gait and the disagreeable odor emitted from every pore of their bodies.

All this results from the false theory that disease is something to be killed or expelled from the body. A false theory of the nature of disease must necessarily lead to false system of treatment. A brief consideration of this matter is important. Disease or disorder is primarily no material thing, it is a lack of *ease* and *order* in the system, a derangement of the dynamic or life force. When there is a disturbance of the life principle *pain* is usually manifest in one or more organs and the person is not at ease. What follows, as a necessary act, to restore to health, but to restore this life force to its normal action, then every function is put in order and all the processes of life carried on normally. If there be germs or any other material obstacles present nature disposes of them in a safe and natural way. This governing element or force of life is ever present and ready to perform its uses. Every form of life begins with a cell and is developed in the ovum, infant, and adult to old age, and every cell is formed, renewed and multiplied indefinitely, by this governing force or principle of life.

This is the power or force which the physician has to deal with in every phase of his operations. He cannot cure any

case, no matter what it may be, if he proceeds in violation of this ever-present and vital force. The surgeon may amputate a diseased limb or perform the most skillful operation, but he cures nothing. Unless the vital principle, nature's curative power, comes to his aid he has no success.

It is a mistake, and often a deadly error, to throw into the delicate organism of a living being a drug or poison, and all drugs are poisons of less or more violent nature. Life is a *resistance* and nothing can enter into, or upon a living being, of an irritating nature like a drug, that nature, that life force, does not resist, react, kick.

Let us consider this more fully, for therein lies the fundamental principle of all living creatures, human or brute, especially as to all diseases and their manner of cure. The doctor who does not understand and observe this can have little success in curing his patient, and may be a menace to his life. It was an expression of the old doctor from early times when his patient was very low and his chances doubtful that "unless there is a reaction he is lost."

What is a reaction? It is a contrary or reverse action and comes from the resisting power of nature, that which resides in every living being.

It is a universal law which pervades nature and all things therein, that *action* and *reaction* are equal and *opposite*. If a hammer is struck upon an anvil the latter resists, reacts, kicks and the hammer is thrown off. Everything animate or inanimate will resist or react when struck except a ball of putty, which has no resistance, or a cadaver which has lost all its resisting power.

So long as there is life there will be resistance. A few illustrations of this may be in order. If we handle snow the first or primary effect is a most uncomfortable sensation of cold in the hands. Cold is antagonistic to, and an enemy of, life.



Nature treats it as such and rouses up her resistive forces, her reaction, and soon there is a fine glow of heat which may last for hours after the primary action has passed. In most cases a cold sensation is followed by a reaction which reached up to the normal or health standard or temperature and there stops.

If too prolonged or too often repeated the result may be disastrous. This is exemplified often in aged or feeble persons. After a long and cold winter such people die in the early spring, from exhaustion. The cold exposures too often repeated have finally worn out their resistive power and without apparent disease they sink away out of life.

If a chill is more decided, taking one much below par, then the reaction goes above par and fever results. In fact, nearly all diseases begin with a chill, then follows fever which is nature's reaction and, unlike all similar action in inanimate objects, this resistance or reaction does not stop at the normal stage, but is more lasting than the primary action and destructive effects may be the result.

A person may face a cold northwest gale and his lungs become chilled. Thereupon this life principle reacts and the reverse of a chill follows, which is fever, resulting in what is commonly called pneumonia.

Is there anything in all human experience more self-evident than this as the *cause* of pneumonia? Yet the whole medical world has the foolish idea that there is a contagious germ as the cause of this disease. When the blizzard is fiercest, the cold most intense and every living thing seeking warm quarters, this little imp, the pneumococcus, is most rampant in seeking his victims. In another generation, possibly one-half that time, this fad will be buried with much other discarded rubbish and doctors will be so ashamed of the "germ theory" that they will not hear it mentioned with patience. The sooner that time comes the better for mankind, for when sick a false idea of the nature of disease leads to false and dangerous treatment.

Man is said to be a "worm (germ ?) of the dust," and this modern practice is very liable to kill the wrong worm, the man himself.

Medicine is a great profession, numbers over 100,000 in this country alone, and with all its faults is strongly entrenched in the affections of mankind. They know not when sick what else to do or where to turn, although large numbers repudiate it and turn to some one or more of the many fads and follies all around us. If medicine was what it claims to be, truly a healing art, this could not be so, and doctors would not seek by legal means, to suppress their rivals. (Their bill now before Congress, for this purpose, should have the title: "An Act Granting a Monopoly in Homicide.")

With the lawyer and preacher their tricks of logic and oratory are open and visible to all. The doctor has up his sleeve and when he plays them no one but himself knows what they are. For the patient or friends to seek enlightenment thereon would imply a doubt of the doctor's integrity and skill and would be resented. Of course, no one doubts his sincerity; he does his utmost and when he fails his grief is often intense and weeping relatives and friends shower encomiums on him, with the expression, "How he did work to save the man." If they fully understood the whole matter they could then see how he killed him.

All diseases are caused by colds, as the exciting agent, by sudden changes of temperature, from toothache to the cholera. A hundred soldiers may be exposed to the same storm in the same way. One is taken with pneumonia, another with rheumatism, another with quinsy, diarrhea, etc., through a list of a dozen or more according to the condition of his system. All others escape if their resistance is in full activity. Smallpox is about the most intense of contagious diseases, yet there are a few who, at times, are not susceptible to it.

When a student I knew two such who refused to be vaccinated when variola broke out in the class. They had been exposed several times before and claimed to be immune. This time both took it and died. Change of climate, diet, etc., had so lessened the resistance of their system that they become amenable to the disease. Thus it is evident that there is no other way to avoid disease, and cure the sick, than to call out the resistive power which resides in every living body. Drugs, in toxic doses, have no power to do this, but just the contrary. There is a universal feeling that the profession of medicine is largely a failure; at least very deficient in its most important ways, though few understand just why this is so. How can it be otherwise when we consider that one-half the human race die under twelve years of age? If there is a true healing art, how can this be? In my youth I lived in a section where the burial lot had but one tenant the first eight years and he had been found dead in his field. There was no doctor within 15 miles. Sixty years later this ground had been doubled and quadrupled and had become very populous with those of all ages. A dozen doctors had made liberal contributions thereto.

There is an old saying attributed to Sir Astley Cooper of England, the most renowned surgeon in the world in his time, that "Medicine is founded on conjecture, and improved by murder." Many noted men of high renown have given expressions of the same kind. Everywhere we see confirmations of this. In infancy, youth and mature age, great numbers give up their lives, end their earthly career prematurely. It is a slur on the Creator to claim this as His intention regarding our race. Does it not become a great profession to find out why this is so, find the error and remove it? If on the wrong track get off it and make haste to find the right one. Surely the world is ready and waiting for this.

There is only one way to cure disease, to restore to health when the system is out of order, and that is to call out nature's

curative power, the "*Vis medicatrix natura*," known from early times, that principle in every living being from the first cell with which life started through all the varying stages up to full maturity. Every organism is composed of cells and every cell is a form of life and the multiplication of these forms the complete being according to its nature. Every cell has within it that degree of intelligence necessary for its proper life and growth, by which it selects from the blood current just the kind of nourishment required for its life, thus nerve for nerve, bone for bone, muscle for muscle, etc.

This is an age of progress. Old things are changing everything, becoming new. Why should not medicine? The time was not long ago when all knowledge of astronomy was based on the false theory that our world was the center of the universe, and that the sun and moon and all visible creation revolved daily around the earth. Such really *seemed* to be a fact. Scripture so declared, and who could be so venturesome as to dispute it? On this theory all the world moved on with apparent safety and satisfaction. The farmer could plow, sow and reap his crops with success, but to navigate the great seas was impossible. So with the doctor with minor ailments; most will recover in spite of false theories he may entertain. ..

All things are changing. In theology it was not long ago when hell and the devil were the sole topics in all preaching. It was to beware of the devil, hate the devil, fight the devil, etc. Most people are reluctant to renounce an old favorite, but some will in the belief that thereby they will escape hell. The love of the Lord is now foremost, certainly an improvement. Nothing now is sacred simply because it is ancient. Of all classes of men, doctors are most reluctant to change their methods of practice. When they get into the ruts they cannot or will not try to get out. They dote on the "combined wisdom of 2,000 years," and when it kills it is *secundum artem*—according to the rules of the art, and every one of their confreres will uphold them. . .

It is said that Life is a series of Resistances. It is owing to this power of resistance with which man is endowed that he is able to live in the midst of unending vicissitudes and obstacles which surround him. Some claim that if we would always observe the laws of nature we would never be sick and perhaps never die. Our Christian Science friends claim that the adoption of Mrs. Eddy's law would abolish "sin, sickness and death." This is much to be desired, if true, and is what the world needs. The fact is nature's laws are not always in harmony : a stroke of lightning will destroy in a moment a majestic tree which has been the growth of a century ; an untimely frost will destroy in a night the gorgeous beauties of a whole season. Man is living in the midst of these discordant elements and it is only by unceasing vigilance that he is able to survive as long as he does and retain a fair degree of health and strength. This is because of that ever-present force, his resisting power, with which he is endowed, and it is this force or power which should always be conserved for this is the basis of all his activities and it is to aid, call out, and develop, this power that the physician should direct his efforts. How can this be done ? It means the *reverse* of former methods.

Heretofore most medication has been on the opposite principle, that of *contraries*. For fever and inflammation, and nearly all diseases is attended with fever, *heart depressants* have been the main resort. Beginning with blood-letting, 2,000 years ago, it was the principle treatment down to the middle of the last century. I can recall the cases of three able-bodied men who, with pneumonia, fell victims to this treatment on the third or fourth day of their illness.

My own grandmother with a common cold was bled twice and never rallied from the second bleeding. A notable case, known to all, was that of Washington, a vigorous and well-preserved man of 68 years. He had an attack of quinsy. His farmer bled him. In those times farmers and every common

plug carried a fleam or lance and with any illness, of man or beast, a vein was opened. The patient was worse and two doctors, then called, bled him again and then, against the remonstrance of that great man, who declared that he had no blood to spare, bled him the third time. His resistive power was destroyed, no reaction followed and he died in 23 hours. A clear case of homicide. Some say that is ancient history, and that practice is out of date and gone out of use. Please do not deceive yourself, the *system* is the same as it has been from the dark ages. Blood letting was the great heart depressant until modern times. Now digitalis, Veratrum and the coal tar extracts are just as powerful and deadly as was the lance. Yet they are in universal use throughout the whole world where there is such a thing known, or claimed, as medical science. With all the boasted changes and so-called improvement in medicine, the basis principle has not changed. In fevers the method is to knock down with heart depressants. When depressed too much, boost up with stimulants.

When the heart's action is reduced by a drug, or other unnatural means, it will react and come up again, then when depressed again it again tries to rally, the third—some times the second—it fails, then stimulants are resorted to, but stimulants are also very depressing when given in large doses. Look at the man who is intoxicated. His pulse is slow, his lips, ears and other parts purple with congested blood. His blood is circulating with great difficulty. Is this a good condition to produce in a man, sick or well? In full health and strength one can withstand considerable depression, or stimulation, with comparative safety, but to the sick man under the stress of a violent disease these are dangerous and often deadly.

And why strike down the heart? This organ is the strongest and most dense of any in the body. It is seldom sick and when it is, is just as amenable to treatment as any other organ, except a "tobacco heart." No doctor on earth can cure that or help it much.

When the disease is in some distant organ, why jump on the heart? The real trouble may be pneumonia, pleurisy, peritonitis or like rheumatism in the feet, remote from the heart. That organ is the great motor which carries on all the processes of life and when death comes, if let alone, is the last to yield.

In every community, almost daily, are reports of cases of pneumonia which are fatal on the second or third day.

Newspapers contain such reports every day. Now I affirm, without fear of contradiction, that no uncomplicated case of pneumonia ever proves fatal before the sixth day if no medicine whatever is given. In chronic diseases far advanced, like consumption, diabetes, etc., pneumonia may set in and terminate sooner. All inflammations, when allowed to run their natural course, reach a crisis on the sixth or seventh day, when recovery begins or death results.

The late King of England, after four or five days of illness that did not seem severe at first, sunk down with his vitality exhausted. The medical report stated that "His flagging heart would no longer respond to stimulants." Is not this proof that stimulants are depressents, and never give real strength in health or disease?

The prevailing theory in medicine is that diseases are to be treated by contraries, that is, fever by depressents, debility by stimulants, pain by narcotics, etc. Much of medical history proves that a failure. What, then, is the natural and self-evident conclusion? Why *reverse*? Try the *opposite* method, that of *similars*. Call it by another name if you choose, say the *System of Reactions*, which means to give medicine so as to have the *Reaction* in the *Line of Cure* instead of opposed to it.

Samuel Hahneman, a German physician, 120 years ago, became convinced that the system of medicine then practiced (and it is the same now) was wrong, false in theory and dan-

gerous in practice. Some experiments he made convinced him that medicines could be given on the theory that there was a law of cure called *Similia*. For twenty years he made experiments on himself, his students and willing friends, by taking small but repeated doses of drugs to ascertain their exact effects on the human body. In these days innumerable experiments are made on animals with large doses to see how much they can stand of any given poison and survive.

Surgical experiments also are made to find out what success may attend the grafting of the leg or tail of one dog on that of another. This is called modern surgical science founded largely on *vivi-section*.

Truly surgery is a great art, but it is horribly overdone. Three-fourths of it would be unnecessary if the *curative power* of medicine was better known. .

Hahneman's experiments consisted in learning the full range of action of drugs and then trying them on the sick in accordance with his doctrine of *similia*, that *like cures like*.

For 20 years he experimented and practiced in this way until he became convinced that he had found a true law of cure before he published it to the world and invited medical men to try the same method on the sick and verify it each for himself. And now for 100 years this system has been tried and found efficient by many thousands of physicians in all parts of the world, and with tens of thousands of the sick and always with safety.

Hahneman was born in 1755. When 80 years of age he removed to Paris, where he practiced eight years with great success. Dr. Valentine Mott, of New York City, the most noted surgeon in the world in his day, visited Paris in 1840. On his return he reported to the New York Medical Society, where Hahneman's fame was known, that he was a medical man of distinguished talent and ability. Whereupon he was endorsed as an honorary member of that society, but later this



was withdrawn from fear that something new might disturb their craft.

Hahneman's system of medicine is confined to the two great branches, *Materia Medica and Therapeutics*. These are what compose the *healing art* and comprise all which is known in the way of medicine.

There are no doubt other ways of curing the sick, in special cases, and to a limited extent, without the use of medicine.

The world is full of schemes for this purpose, some of which are useful, especially hygienic measures, but none of them can be called a system of *medicine*, even if they can be called a *system* of any kind, certainly not a *science*, according to a true definition of that term.

Now, narcotics do not cure pain. They benumb, or partially paralyze, the whole body. Pain is nature's call for help when there is disorder in the system, and is the most important means we have to locate the trouble and determine its nature and extent. Without this we would often be at a loss to properly diagnose the case. The absence of pain in the early stages of cancer, consumption, diabetes, etc., is one of the main reasons why these diseases are so nearly incurable.

"The treatment of pain with narcotics may be compared to a man who is assaulted by a highwayman. He cries aloud for help. A policeman, being in hearing, rushes to his aid and *gags* the victim while the assailant (supposed to be germs?) go on unmolested with their work. When the patient dies, the doctor is blessed because "he has died *so easy*."—*The Medical Counselor*, May, 1910.

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## REFUSE AND SEWER.

BY DR. BASANTA KUMAR GHOSH., L.M.S.

*(Communicated)*

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(Continued from page 339.)

Since the time when the construction of sewers became general, there has always been a more or less wholesome dread of "Sewer air." One often hears it stated, that certain places were perfectly healthy and free from nuisance, as a result of disposal of sewage, until the general system of sewers had been introduced. Such a statement must be received with considerable amount of qualification. Many examples of the primitive state of things are in existence even now in small towns, where the fluid refuse is simply discharged from houses on to open channels, communicating with street gutters, along which it travels to the nearest ditch or streams, although at times it is conveyed there in brick sewers, with which the street gutters are connected, the whole being periodically flushed with storm water. Undoubtedly such a system is extremely unsightly and the risk of well pollution and other dangers from the saturation of the soil with sewage, which percolates freely from many stagnant pools along the course of the rude channels, are great. The dread of the sewer air found expression by Sir John Simon, when in one of his classical reports to the Local Government Board he wrote "Filth does not only infect where it stands but can transmit its infective power afar, by certain appropriate channels of conveyance." The belief that specific diseases were transmitted through the air of sewer, was rather rudely shaken many years ago when Carnelly and Haldane published the results of experiments, they had made on the air in sewers in certain places. The conclusion they came to, which was subsequently endorsed by Pary Laws, was that the air of sewers was much better than might have been expected and that it contained a

much smaller number of organisms than any class of houses. Not many years afterwards, however, a contrary opinion was expressed by Dr. David Arthur and only within the past few years Horrocks and Andrews have by independent investigations demonstrated that the characteristic sewage bacteria are to be found in the air of sewers. Some years past the Corporation of Manchester, asked Prof. Delepine to investigate the influence of sewer air upon health. The conclusion to which Prof. Delepine had come to as a result of his investigations, is that the air of a fairly constructed sewer carrying moderately dilute sewage of average composition is free from appreciable noxious properties. He is careful to qualify his opinion by saying that it is not applicable to the air of sewers where owing to the formation of deposits or for some other reasons the air has become loaded with an unnecessary amount of noxious gases, not usually present under other conditions; nor does it apply to sewers, receiving certain kinds of trade effluents or waste products: nor to the air escaping from the foul drains or pipes, which air may be quite different from the sewer air or may contain particles of dried materials, not to be found in the sewer air. It is considered that in all probability, the bad effects which have, at various times, been attributed to the sewer air should have been considered as due to the changes in the sewage which need not have taken place or to admixture with noxious products, which might have been prevented. The possibility of the sewers being the channels by which Enteric fever, Cholera and like diseases have been propagated from house to house and of Diarrhœa and other intestinal disorders also occurring as a result of the foul emanations, have often been referred to. Admitting however, the occasional occurrence of such diseases, as referred to above, it has been proved beyond doubt that the sanitary advantages of sewers greatly counterbalance the defects: The difficulty of proving this point statistically, consists in the number of other conditions affecting health in a town, in addition to that of sewerage. Enquiries have been

instituted by so eminent sanitary experts as Dr. Buchanan and Sir John Simon into the total death rate from all causes and the death rate from some particular diseases, in a number of towns before and after sanitary improvements, principally consisting of sewerage, town conservancy and water supply. The general result was that such sanitary improvements had resulted in lowering the death rate in 80 per cent. of towns.

Sanitation and Mortality. The reduction of enteric was extremely marked.

Where augmentation had occurred, it was manifestly due to imperfections in the sewerage arrangement. Cholera epidemics, Dr. Buchanan considers, to have been rendered "practically harmless." The mortality from Diarrhoea had also been greatly reduced in many towns as also that from enteric. Fever and diphtheria had been universally reduced. The effect of good sewerage has therefore been to reduce the total mortality especially by reduction of death from enteric, cholera and the like maladies.

It will not be out of place to refer to a fact that we have heard it said that some doctors in England have begun to complain seriously that the higher standard of health on the part of the population, is having a distinctly unfavourable effect on the financial prospects of the medical profession. In confirmation of this it is pointed out that in a volume of vital statistics, published some time ago, it is asserted that there has been a decrease of 50,000 cases of sickness per annum in England, since the passing of the Public Health Act in 1875. The same also can be said as true in Calcutta where average sickness and mortality apart from occasional epidemics have decidedly been on the wane. This is borne out by the medical practitioners here who like their brothers in England are undoubtedly suffering in finance to an appreciable extent.

It must be admitted that this salutary effect here is certainly due to the fact that the Corporation of Calcutta have been untiring in their zeal and sparing no pains nor money for the health of the city. It is however no exaggeration to say that the construction of sewers

Calcutta Corporation and health of the city.

and house drains in the added area and the upkeep of those already in existence in different parts of this vast city may be regarded as largely contributing to this reduction of diseases and death. There is no doubt as to the fact that certain conditions to make this system a success must be present or else this system so good in principle, would be disastrous. There shall be a good supply of water for flushing sewers, good ventilation, proper outfall and satisfactory means of disposal of sewage. In the absence of these conditions we ought not to disguise the fact, that the sewers improperly managed, may give rise to incalculable dangers. They are underground conduits, connecting houses, allowing not merely accumulation of human excreta but a ready transference of gases and organic molecules from house to house and occasionally causing, by bursting or sinking contamination of the surrounding soil and poisoning of the water supply. All these dangers are the greater for being concealed. No argument however ought to be drawn against sewers from imperfections in their construction. In advocating water carriage system, it must be assumed that in these days of vast sanitary and engineering skill, the construction of the sewers shall be perfect, that they are laid with all the precision and precaution of modern science, that the houses are thoroughly secured from reflux of sewer air, that the water closets are properly used and that the conditions of sufficient water supply, and power of efficient disposal of sewage are all present.

It is not always possible to demonstrate that salutary results follow each individual act of sanitary improvement. Any effort at such improvements is, to my mind, everywhere on the globe, despised and inimically criticised by the people concerned.

Sanitary work  
and criticism.

No one probably feels the agony of adverse criticism and public hatred more than the Sanitary officers do, as operators of the Law of sanitation, having had to do a most thankless task, merits of which are seldom appreciated in this poor country. The public are reluctant to recognise the simple fact that they derive a substantial return

in the long run for the money expended in sanitary work. To quote Dr. Parke's—"It has been proved over and over again that nothing is so costly in all ways as disease and nothing is so remunerative as the outlay that augments health and in doing so, augments the amount and value of the work done."

The fact is fully appreciated that any approved form of sewage disposal is more or less expensive and it is this question that chiefly moves the rate-paying inhabitants of our country, to bitterly protest. They say that public health in the past had not suffered to any appreciable extent from the long accustomed but primitive methods of getting rid of sewage and they sincerely but ignorantly believe there is hardly any justification for saddling them with a heavy expenditure afresh only to meet the whims of some enthusiastic faddists.

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## EDITOR'S NOTES.

**The Work Cure in Tuberculosis.**

F. Dumarest, in *Le Bulletin Medical* contrasts the rest cure, so frequently used in tuberculosis, with the newer method of treatment used in England, which may be called the work cure. In some English sanatoria a system of graduated labor is made use of, originated by Paterson, which has been quite successful. In applying this system we think less of the physical signs than we do of the general condition of the patient. When a patient shows fever he is put to bed, until this has passed away. After this he is given a small amount of labor equivalent to the lifting of a certain amount of weight. As he is able to do this it is gradually increased. The work is, as far as possible performed in the open air, being for the men gardening, carpentering, painting, wood-cutting, etc. All these trades are carried on so as to be of value in the maintenance of the sanatorium. The women cultivate garden vegetables for the table, and have care of poultry. The coming on of slight fever in such persons is considered a favourable sign rather than otherwise, and is indicating the formation of a power of resistance to the disease. It is a reaction such as occurs when tuberculin is injected. Under this system 80 per cent. of the patients are cured. Work is considered a part of the cure, and those who are not willing to perform it are not admitted to the sanatorium.—*The North American Journal of Homœopathy*, August, 1910.

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**The Athletic Life and Degenerative Changes in the Cardiovascular System.**

Robert E. Coughlin, M.D., in the *Medical Record*, thinks this topic especially timely, on account of the popularizing of school athletics. It seems to be the opinion of all observers, that the heart is most likely to be damaged from excess of athletics. Brooks, of Oxford, says that valvular lesion is very rare, but there might be slight dilatation, as this is very difficult to estimate. He believes that the most vigorous undergraduates come from schools where athletics

are of the most strenuous type. Moritz, who has studied the hearts of wrestlers and bicycle riders in no case found any dilatation of the heart, but claims to have found a diminution in the heart following moderate exercise. A medical editor concludes that training prepares the heart for greater strain, increases the subject's power of using his tissues and at the same time gives him more muscle tissue to use. On the other hand, all authorities quoted condemn the excess of exertion in Marathon races. The chief danger to athletes seems to come after the fortieth year. The tendency at that time of life is to abandon active exercise, and the enlarged heart calls for some stimulation, and instead of exercise, the man takes to drink. Or it may be that with a cessation of active exercise, the hypertrophied muscle fibres of the heart atrophy or undergo fatty degeneration, the heart becomes weakened, the cavities dilate, and sudden death results without apparent reason. The chief lessons to be learned are that exercise in moderation is a good thing while over-exercise, such as the Marathon race is to be condemned. That walking in the open air, with free breathing and good style, is as useful a form of exercise as any. That the penalty of early athletics is athletics all of one's life. To lay aside athletics and exercise after once having vigorously followed them, is to invite tissue changes in the vascular system, particularly the heart and arteries.—*The North American Journal of Homœopathy*, August, 1910.

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### Ingrown Toe Nails.

Eli G. Jones in the *Journal of Therapeutics and Dietetics* says that forty years' experience convinces him that this troublesome affliction may be cured without an operation by scraping the top of the nail thin and cutting off the sides of the nail. Then paint on tincture of the chloride of iron along the sides of the nail and the inflamed surface, once a day until the soreness is gone. Then lift up the edges of the nail on the sides and press cotton wet with tincture chloride of iron under the nail. The method is said to cure in two days.—*The North American Journal of Homœopathy*, August, 1910.



### Inadequacy of the Mussulman Hospitals.

The Mussulman hospitals of Constantinople treat unusually large numbers of patients, and it has been found that the medical and administrative staffs of these charitable institutions are wholly inadequate to meet, in a satisfactory manner, the present-day needs of the city. The authorities have therefore decided to send some of the patients to the Greek and Armenian hospitals. The Armenian Patriarch, however, who has been advised of this decision, protests against it. He states that during the former absolutistic *regime* the Armenian hospital used to receive from the Ottoman Government considerable quantities of meat and bread, but for the sake of economy these allowances were withdrawn soon after the establishment of the Liberal Government. The Armenian hospital has sufficient work to do without taking in additional patients from the Mussulman hospitals, receiving, as it does, from 800 to 1000 patients per month. The Patriarch concludes his protest by stating that if the former allowances are continued he will favourably consider the reception of patients from the Mussulman hospitals.—*The Lancet*, July 9, 1910.

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### Number of Physicians in the United States.

It may be of interest to British medical men to report the condition in each State, as determined by the Council of the American Medical Association, in regard to the number of practising physicians: Alabama has 1 physician to every 924 people; Arizona, 1 to 626; Arkansas, 1 to 583; California, 1 to 401; Colorado, 1 to 386; Connecticut, 1 to 740; Delaware, 1 to 900; District of Columbia, 1 to 262; Florida, 1 to 865; Georgia, 1 to 886; Idaho, 1 to 664; Illinois, 1 to 587; Indiana, 1 to 557; Iowa, 1 to 605; Kansas, 1 to 642; Kentucky, 1 to 649; Louisiana, 1 to 900; Maine, 1 to 605; Maryland, 1 to 655; Massachusetts, 1 to 567; Michigan, 1 to 649; Minnesota, 1 to 981; Mississippi, 1 to 870; Missouri, 1 to 552; Montana, 1 to 800; Nebraska, 1 to 602; Nevada,

1 to 239; New Hampshire, 1 to 652; New Jersey, 1 to 925; New Mexico, 1 to 626; New York, 1 to 617; North Carolina, 1 to 1216; North Dakota, 1 to 971; Ohio, 1 to 585; Oklahoma, 1 to 581; Oregon, 1 to 646; Pennsylvania, 1 to 655; Rhode Island, 1 to 724; South Carolina, 1 to 1324; South Dakota, 1 to 820; Tennessee, 1 to 681; Texas, 1 to 653; Utah, 1 to 908; Vermont, 1 to 533; Virginia, 1 to 917; Washington, 1 to 616; West Virginia, 1 to 706; Wisconsin, 1 to 930; and Wyoming, 1 to 541. From these figures it will be seen that everywhere, except in the two Carolinas, the competition is much keener than is allowed by the ordinary British estimate of 1 to 1000 as a minimum.—*The Lancet*, July 9, 1910.

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### Baldness.

An editorial in the *Therapeutic Gazette* remarks that ingenious men are continually contriving new kinds of shoes, new suspenders and hundreds of different kinds of braces, but so far no one has taken up the idea of making a hat which will hold on the head and not blow off, and at the same time not bind the head all around like a constricting band. Some men go without a hat with the idea that the hair is improved by ventilation and sunshine. Undoubtedly this does improve it, but the prime secret is not, in not wearing the hat at all. The ventilated hat will not prevent baldness, if this same hat be worn tightly around the head. If a string be tied ever so lightly around the finger, the effect upon the circulation may be easily marked in the end of that finger. A tight hat will effect the circulation of the scalp in the same way. Hats like the stiff straw, which are easily blown off, should never be worn, as they will not stay on unless jammed so tightly upon the head as to impede circulation. All stiff, rigid hats should be very light, and one should select a size larger than the head measurement, and correct the oversize by inserting felt strips under the sweat-band, thus giving a cushion-like effect and preventing the constriction at that portion of the scalp. Dandruff cures are mostly fakes. The good they accomplish is due to the scalp massage used while applying them. Every

man should devote a few minutes each day to scalp massage, which he may apply himself. During the brisk friction he should grasp his hair in handfuls and draw the scalp back and forth many times, to make it slide over the skull. This will prevent binding and thinning of the scalp and preserve the cushion of fat on the top of the head. But all these precautions will be useless unless one uses precautions in wearing the hat.—*The North American Journal of Homœopathy*, July, 1910.

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### Bleached Flour.

We are glad to note that a question was put to the President of the Local Government Board in the House of Commons last week in regard to the bleaching of flour with nitrous acid. Mr. Burns replied that he had already directed an investigation into the matter by one of the Inspectors of the Foods Department of the Local Government Board. We are sure that Mr. Burns will be interested to know how legislation has been brought to bear upon the subject in the United States, according to an account recently sent to us by our own correspondent. In regard to a certain consignment of flour bleached by a well-known process depending upon the production of nitrous and nitric acids from the air by electric sparking, the United States Government held that the flour contained poisonous and deleterious ingredients—namely, the nitrites produced during the process. The flour was condemned and ordered to be forfeited. The evidence of well-known authorities on dietetics, chemistry, and physiology was unanimous in condemning the practice. Dr. Gustav Mann stated that there is always a distinct change induced in the starch as a result of bleaching. From actual experiments he found that the bleached flour was digested to only one-third the extent of the unbleached. The injurious action of the nitrous acid developed in the stomach from the nitrites would be proportional to the amount of nitrites present in the flour. Thus, two molecules would put out of action two molecules of hæmoglobin or two of nucleoprotein and would inactivate two molecules of any ferment (enzyme) that might be present. The bleaching of flour not only causes a loss

in food value, but renders digestion of the food made from it 20 to 75 per cent., more difficult. As regards the effects of the nitrous acid on the human body, there is danger that a dose which under ordinary conditions is normal might cause death in feeble individuals. Dr. Mann concluded that the bleaching of flour should not be permitted. Dr. Hamilton P. Jones said that the use of nitrogen peroxide in bleaching flour would tend to impair the digestibility of the bread and produce gastric irritation. Dr. John Marshall gave evidence that the general effect of the addition of nitrites to food made from wheat flour is to endanger the health of the consumer. Confirmatory evidence was given by Dr. John H. Musser, Dr. David L. Edsall, Dr. Otto Folin, Dr. Augustus H. Gill, and others. In the absence of authoritative statements rebutting this overwhelming array of evidence against the use of flour bleached with nitrogen peroxide, it would seem that the health of the people demands the abandonment of the process. The slightly creamy colour of unbleached flour is certainly more appetising than the bluish-whiteness of bleached flour, and the loss of odour and taste as a result of bleaching are sufficient objections to the process, even without taking into consideration the probable deleterious action of the nitrites on the system.—*The Lancet*, July 9, 1910.

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**CLINICAL RECORD.****Foreign.****A CASE OF BRACHIAL NEURALGIA.**

By DAVID RIDPATH, M.D., EDIN.

Female, aged 47, September 18, 1892. Patient has suffered from severe burning pain of whole of left hand and forearm and tingling of the fingers of the left hand. Patient is a widow, dependent on her own exertions for a livelihood, and goes out by the day to do washing and housework. The pain is worse when she has had the hand in water and when washing, and at night is so severe that she cannot lie in bed but must get up and walk about, moving the arm to get a certain amount of relief. There is a sensation of pressure on shoulder like a heavy weight. She is always worse in wet weather.

**Selection of Remedy.**

**Burning Pain.**—Under this rubric Boeninghausen's Repertory gives the following remedies in the highest rank : ars., arum, bry., carb. v., caust., euphr., iris, merc., nat. m., phos., phos. ac., rat., rhus, stann., sulp., sep., sil.

**Numbness of Forearm and Hand.**—Bry., caust., euphr., merc., nat. m., phos., phos. ac., rhus., sep., sil.

**Water (Washing) agg.**—Bry., caust., merc., phos., rhus, sep., sil.

**Motion of Affected Part amel.**—Rhus, sep.

Of these two remedies of probable utility to which the list has by elimination been reduced, I was led to choose rhus, which appeared to me, from my knowledge of its characteristics, to be the similimum. Moreover, it had the further symptom, sensation of there being a heavy weight on the shoulder. There was also the very strong modality of amelioration from motion. I therefore gave one dose of rhus t., C.M.

September 21.—The patient feels much better, and has been able to sleep for the greater part of each night since the 18th. In about six weeks she was quite well and able to follow her occupation.

## A CASE OF SPINAL NEURALGIA—LACHESIS.

Female, aged 28, married, two children, aged 3 years and 1 year. This patient complains of having for three years suffered excruciating pain in the middle of the back, resembling, according to her idea, rheumatic pain, though she had never suffered from rheumatism.

The pain was more intense on movement and on walking. She cannot lie on the back, as that position aggravates the pain. She has been subject to "bilious sick headaches" for twelve months. This kind of headache is a pressing pain on the vertex, accompanied by dimness of sight. The headaches and the spinal pain alternate. She feels the clothing very tight round the neck.

## Selection of the Remedy.

Rheumatic pains in back, agg. lying on back, 885 and 1333.—Acon., ars., bar. c., bell., bry., cham., dulc., lach., nux v., ran. b., rhus t., sulph.

On walking agg., 1369—Acon., ars., bar. c., bell., bry., cham., dulc. lach., nux. v., rhus t., sulph.

Pressing pain Vertex, 109.—Bry., lach., rhus t., sulph.

Heaviness or pressing pain in vertex felt on waking is one of the prominent and very characteristic symptoms of lachesis, as is also the feeling of constriction round the neck, so that the lachesis patient must unloose everything encircling the neck. In this case I observed that the patient had undone the brooch fastening the neck band of her dress, which she had felt very tight.

As a result of these workings, and of my general knowledge of the genius of lachesis, I administered one dose of lach., C. M., and gave S. L., thrice daily.

When next seen, one week afterwards, she was free from all pain and discomfort, and felt that she had regained the youthful vigor which, though only 28 years of age, she had previously lost.

## A CASE OF RENAL CALCULUS—LYCOPodium.

June 7, 1907, F. C., aged 31, bookkeeper in mercantile house. Complains of having been unwell for a long time, during which he

had been under much medical treatment, and he had been told that he was suffering from renal calculus for which he would have to be surgically operated upon. During this attack he was kept continually under the influence of morphia hypodermically, "which, however, did me no good; indeed, quite the reverse, there being no easing of the intense pain, and then the morphia making me sick." His first outing was to see me, as he did not like the idea of being operated upon. On this date I have entered in my case book as follows:—

Dull, aching pain left hypochondrium for months.

Sharp, sticking pain from left loin down to pubis.

Last year he had a fall down a trap, and thinks he may have strained himself.

Urine frequently bloody.

Once had red sediment in his urine.

Alternate diarrhoea and constipation.

Desire to take deep breaths.

Dull ache for months down outer left thigh and leg.

Sensation of throbbing internally; conscious of heart beating.

Borborygmi.

Heat of back.

Right hypochondrium sore to touch.

Appetite easily satisfied.

Urine, intermittent flow.

Must wait a long time for urine to start. Retarded.

With these symptoms I at once turned to Kent's Repertory with the following result:—

The numbers indicate the page in Kent's Repertory, 2nd edition.

Pulsation Internally, 1353.

Desire to Breathe deep, 760.

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Acon., alum., aur., bor., bry., cact. Calc., calc., p., caps., carb. v., caust., chin., crot. t., glon., ign., lyc., merc., mez., mosch., ntr. s., nux. m., par., phos., ran. b., sang., seneg., sep., stann. strm., sulph. verb.

Easy Satiety, Appetite, 478.—Bry., caust., chin., ign., lyc., merc., phos., sulph.

Pain Right Hypochondrium, 536.—Bry., chin., ign., lyc., merc., phos., sulph.

Urine Frequently Bloody, 679.—Chin., lyc., merc., sulph.

Heat of Back, 878.—Lyc., phos., sulph.

Urination Interrupted, 656.—Lyc., phos., sulph.

Urination Retarded, 658.—Lyc., sulph.

Here you see the probable remedies were reduced to two, lyc. and sulph. and without going on any further with the repertory I made use of what little knowledge of materia medica I possessed to decide on which of these two medicines I should give.

The first question I put decided the selection. I asked the patient if he observed any difference in the temperature of his feet. He at once replied in astonishment, "Yes, the right is colder than the left." "This," he continued, "I told the last three doctors I had, but as they only laughed at me for describing such a symptom, I was afraid to mention it to you, and now, wonderful! you have just asked me that question."

This confirmed the selection of lyc., of which I gave him lyc., 1 M., four doses in water to be taken night and morning.

July 2.—Much better in every respect; has no pain to speak of. But as this is not a report of treatment I briefly state that he continued to improve, with occasional repetitions of the medicine, till on November 5, while at the lavatory, the flow of urine suddenly stopped, and after a short time something passed with great pain, followed by free flow and continued immunity from pain.

#### A CASE OF COUGH—COCCUS CACTI.

A girl, aged 7½, brought to me on account of troublesome cough, with which she (and her parents) were troubled, and with which she awoke every night before midnight.

There was nausea accompanying the cough. The patient was said by her attendant to be quite well, with the exception of the cough, and I could get no other symptoms.

Kent's Repertory. p. 773, I find the following remedies under:—

Waking from Cough at Night—Am. m., bell., calc. c., caust., cocc., coc. c., coff., hyps., kali. c., kali. n., lach., mag. m., nit. ac., phos., puls., ruta, sang., sep., sil., squil., stront., sulph., zing.

Nausea during Cough, 508.—Calc. c., coc. c., kali c., lach., nit. ac., puls., ruta, sep.

Cough 11-30 p.m., 774.—Coc. c.

One dose coc. c. C. M. cured.



In this short paper, and with the limited time at my disposal, I have necessarily just touched on many subjects of paramount importance, and I fear I have tried your patience with frequent repetitions. Apropos this aspect of the case, I quote a story that Dr. Z. T. Miller tells us of a Methodist preacher who used to say that "unless salvation was preached twice on Sunday and prayed for on Wednesday people would forget all about it." I fear that a similar remark may apply sometimes to Hahnemann's teachings.

After the "Organon," "Chronic Diseases," and "Materia Medica Pura," I have found most useful for my own instruction "Kent's Lectures on the Materia Medica," the dry bones of which he has clothed in most attractive raiment, and "Kent's Lectures on Homœopathic Philosophy." Both of these works are to be had in book form, and form interesting subjects of study. Also Miller's (R. Gibson) "Synopsis of Homœopathic Philosophy."

During the first half of the present year, I had the pleasure and privilege of visiting this hospital. I was much impressed by the good work and self-denying energy exhibited by the medical staff, whose work shows good results as compared with the returns of the dominant allopathic school. Should the teaching of Hahnemann, as delineated in the "Organon," be even more closely followed—should they be realized as accurately portraying the method of practice of a great truth in therapeutics, a method of practice full of possibilities only dreamt of at present—should all this be realized I venture to say that the results will be so much further favourably affected, and will afford an irresistible argument for the consummation devoutly to be wished for—the foundation of a teaching and graduating school in London which may, I believe, become the chief centre of homœopathy in the world and the Mecca of all true homœopaths.—  
*The North American Journal of Homœopathy*, July, 1910.

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## Gleanings from Contemporary Literature.

### BRITISH HOMŒOPATHIC CONGRESS.

The British Homœopathic Congress was held at Tunbridge Wells, on Friday, July 1st, under the presidency of Dr. Frederic Neild.

The proceedings opened on Thursday evening when the President, Dr. Frederic Neild, and Miss J. M. Neild, invited the members of the Congress to a reception at Mount Pleasant House.

The Congress met at Earl's Court Hotel, on Friday morning, when the President took the chair.

The President first announced the presence of Alderman H. M. Caley, the deputy mayor, who desired in the name of the town to extend a welcome to the Congress at Tunbridge Wells.

After a few appreciative remarks in reference to the President, Alderman Caley expressed the hope that the time spent in Tunbridge Wells by the visitors would be not only pleasurable but profitable.

The President, on behalf of the Congress, expressed hearty thanks for the cordial welcome extended to them, and for the kindly words spoken by Alderman Caley. Dr. Neild then welcomed those ladies and gentlemen who had come from a distance who were accompanying those directly connected with the Congress.

Several letters of apology for absence were announced.

The President then read his address, which was published in the *HOMŒOPATHIC WORLD* for July.

A vote of thanks to the President was proposed by Dr. G. Blackley and seconded by Dr. Storar.

The vote was carried by acclamation, and in reply, Dr. Neild said the vote and the kind words which had been spoken were beyond his deserts. The preparation of the paper had been a labour of love, although he confessed that at the start he was inclined to throw up the task and ask the vice-president to take his place.

Dr. Byres Moir read his paper on Lobar Pneumonia, published in this issue.

Dr. George Clifton's paper on Pleurisy, published in this issue, was read by Dr. Burford.

This concluded the morning session, and the members then adjourned to luncheon, which was provided by the local Homœopathic physicians.

On resuming the afternoon session—

Dr. J. H. Bodman proposed a vote of thanks to the local colleagues for the hearty reception they had given the visitors. No more pleasant place could have been chosen and nothing could have exceeded the hospitality of the local colleagues.

The vote was warmly endorsed by the meeting, and Dr. Pincott briefly made acknowledgment on behalf of the Tunbridge Wells practitioners.

The President mentioned that in the interval a telephone message had been dispatched to Dr. Ilyce Brown, conveying the sympathy of the Congress in his illness, and that he had sent his greetings to the Congress.

Dr. John Roberson Day then read his paper on Acute Pneumonia in Children, as published in this number of the WORLD.

A discussion followed the reading of the three papers.

Dr. J. H. Bodinan said that there were three drugs the action of which in acute respiratory cases he had over and over again had opportunities of verifying. He brought them before the Congress as supplementary to what had already been adduced by the readers of the papers, who could not be too heartily thanked for the manner in which they had placed such carefully prepared material before the Congress. The first of the three drugs he would mention was *Veratrum viride*, which he thought was worthy of a better place than had been given to it. It was referred to in the papers of Dr. Day and Dr. Moir, but he mentioned it because he had many times had opportunity of observing that if given at the very onset of cases of acute pneumonia, particularly of the lobar type, it seemed to abort the case. He believed this effect was first pointed out by Dr. Hale, and it was referred to in their literature. It had a specific effect on cases of acute pulmonary congestion, and while it had all the advantages of *Aconite* as regards the general symptoms, it, had the added advantage of having a specific effect on the pulmonary circulation. It had again and again, in conjunction with *Phosphorus*, apparently aborted cases of acute lobar pneumonia, so that the temperature fell to normal in twenty-four or thirty-six hours. He had seen this on several occasions, and it had become such an established fact in his own mind that he always started with it, with *Phosphorus* in alternation. In quite half the cases seen on the first or second day of the illness the attack was aborted, the temperature becoming normal or within a degree of it, within forty-eight hours or even twenty-four. The speaker described the case of a little boy aged seven, who was first seen on the second day of his illness, when the temperature was 103°, and there was dullness with bronchial breathing at the right base. He was given *Veratrum viride* 1x and *Phosphorus* 6x. The following day the temperature dropped from 103° to 98°. It did not rise for the next forty-eight hours above 99°. It touched 100° once, but the back of the attack was broken within the first twelve hours. He recommended the drug as a remedy to be used from the very start, and he thought it a remedy to be given a foremost place. The second drug he wished to refer to was *Iodine*, which came in at a later stage. In cases which did not abort under *Veratrum viride* and *Phosphorus* in the course of a day or two, and where there was evidence of consolidation, he thought that in the majority of cases it was a great help to turn to *Iodine*. He had used the ordinary tincture, a few drops in a tumbler of water; and sometimes the 3x tincture. This practice was first suggested by Kafka from the analogy of the action of *Iodine* in membranous laryngitis. He brought it before them now because on many occasions it had proved itself of the utmost value

in cases of typical lobar pneumonia. There was the case of a school some time ago where there was an epidemic of pneumonia. About half the cases were under homœopathic treatment, and the remainder under allopathic. In the case of those under homœopathy, *Iodine* was the principal remedy employed, and the nurses were struck by the much better progress that they made. In one of the most threatening cases that he had seen in a child, the temperature dropped to normal within twenty-four hours after *Iodine* was given. The third drug he had several times verified the value of was *Sanguinaria*, particularly in those cases where after influenza they got bronchopneumonia, especially in old people. He had in mind several cases where old people seemed in danger of being asphyxiated by mucus, and *Sanguinaria* being used, they were enabled to get rid of it. In cases where they got that type of pneumonia after influenza he recommended them to think of *Sanguinaria*. In many cases of acute respiratory disease in young children certain accessory measures were of great value. He had in mind the case of a child, aged seven months, which while teething, became ill with acute bronchitis. Respiration varied between eighty and one hundred, the pulse was at 150, and there were hardly any breath sounds to be heard at the back. It was one of those cases of acute capillary bronchitis filling up the lungs, and the child was rapidly getting into that comatose state where failure of respiration seemed imminent. Holt, in his excellent work, pointed out that one of the greatest dangers in such cases was failure of the heart from obstruction of the pulmonary circulation. The right heart became engorged, and in such cases he recommended mustard either as a mustard pack or a mustard bath, because by dilating the superficial vessels they were relieving the pressure on the right heart. He thought they could easily see how that had all the advantages and none of the disadvantages of bleeding; it might be spoken of as bleeding the patient into his own capillaries. In the particular case to which he was referring, when the child was in that threatening condition he had it put in a hot mustard bath. The reddening effect on the skin was most marked, and after that came manifest improvement. Another adjunct he gathered from Holt was this: in such cases they often tended to become drowsy, the respiration becoming more and more shallow and tending to cease; then the thing was to keep the respiration going, and Holt said there was nothing better for this than a spanking. The child should be given a good smack from time to time to wake it up, and make it cry. In this particular case they did so, and it effectually stimulated respiration. By these means, the mustard bath, the spanking, and a little oxygen, the case was tided over one of the most threatening crises he had ever seen.

Dr. Murray Moore said he could fully endorse what had been said about *Veratrum viride*. He learned its use in America, where it was more commonly used than *Aconite*. His employment of it had been in the form of pneumonia called sthenic. Where the heart was distinctly weak or it might be somewhat degenerated, it was not safe, in his

opinion, to give *Aconite*, nor was it safe to give it to a child under similar conditions under twelve or fourteen years of age. He had looked upon *Veratrum viride* as the American *Aconite*. He gave it  $\text{Ix}$  as a rule in cases where he should otherwise give *Aconite*, alternating it with *Phosphorus*. *Phosphorus* alone would cure many cases of simple pneumonia, but there were very few cases of pneumonia without some complications. It was found in all ages, from birth to extreme old age, and they generally had to consider associated symptoms, more particularly the morbid condition of one or other of the organs of the body, when prescribing. It was extremely difficult to take all these circumstances into consideration when deciding upon one medicine or even two, but they might all take heart in the treatment of pneumonia, by the magnificent statistics Dr. Day had so admirably drawn up. He never saw a more convincing body of statistics and he wished they could go into the *British Medical Journal* and the *Lancet*, because, although the sneer was often used that they could prove anything by figures, those of Dr. Day were so carefully compiled and the elements of error so carefully eliminated, that they were worth being known to the profession at large. He could agree with what Dr. Bodman had said about *Sanguinaria*. He had found it of great use in certain forms of pneumonia in children. They had that day had three admirable papers, which would form splendid reading.

Dr. Goldsbrough spoke of the great importance of precision in the matter of repetition of doses. He was just discharging a case of acute rheumatism. He had prescribed one dose only of *Pulsatilla*, and he had never seen a better result in any case before. He had been in practice for thirty years and never knew a case which yielded to treatment so rapidly. His opinion was that repetition of dose was a matter which they were only on the verge of understanding correctly. He had not himself seen any use of *Bryonia* in pneumonia and pleurisy under the sixth dilution. He had seen great benefit from that, and also the twelfth and thirtieth. In bronchitis he certainly had seen benefit from the third attenuation, but generally in the sixth, twelfth and thirtieth the results were better. He should like to commend the local application of *Iodine* for pleuritic effusion. He had had in the last year two serious cases of pleuritic effusion following influenza, in which *Iodine* facilitated absorption within a reasonably satisfactory time. He had certainly used the hypodermic syringe in each case, which helped to give a start in absorption of the fluid. In neither case was any pus formed. He was sorry that he could not agree with Dr. Day that statistics were the final word to be said with regard to results. He thought the final results were individual cases because there were so many factors at work in the production of cases. Dr. Goldsbrough did not think he was behind in a defence of homœopathic treatment, but if anything, Dr. Day's statistics overlauded the advantages of homœopathic treatment. When they remembered that the statistics of the Homœopathic Hospital were drawn over a period of ten years and those of other hospitals over individual years, there must be some little

difference to be considered. For his part he thought that as homœopaths, when they knew they had advantages in their system and methods of treatment, they should rather try to point out any factors that would detract from their merit than to pass them over. He did not say that Dr. Day had adopted the latter course, but it was possible that the cases occurring in one year would be very different from those occurring over ten years. Moreover, the East London Hospital for Children must have a different series of cases from what they had at Bloomsbury. While their statistics appeared favourable and a long way ahead of those of the dominant school, they ought not to try in any way to take more advantage out of statistics than they would warrant.

Dr. W. T. Ord thought that the Council was to be congratulated on having obtained such papers for reading before the Congress. Although, as they were reminded, statistics were sometimes of dubious value, he recalled the enormous impetus given to homœopathy fifty or sixty years ago by the statistics of the treatment of cholera at the London Homœopathic Hospital. They remembered the effect when the figures were read in Parliament, and how enormously homœopathy was helped forward. There were cases in which statistics had a high value, and those to which they had listened that day had been so carefully prepared that if there were any present possessing doubts as to homœopathic treatment, they would not remain longer in doubt. As Dr. Goldsbrough had remarked, there was considerable difficulty about statistics, because they never could be sure that the surrounding treatment had been the same in each series of cases. There was only one possible way of settling the matter, but he was afraid they were not on sufficiently amicable terms with their friends the enemy, to carry out the suggestion. The way to settle the question would be to allow the doctors of the Children's Hospital to treat the cases in the Homœopathic Hospital, and see if they could get as good results, and for them to permit the homœopathic physicians to treat the cases in their hospital, and see if they could not obtain better results. He thought that if such an arrangement could be made it would result in an eye-opener. With regard to the attenuated doses of drugs that should be used in pneumonia he would remind them in a valuable series of experiments by Fleischmann, in the Vienna Hospital many years ago, the question of attenuation was gone into. A series of cases were treated with *Phosphorus* in the lower dilution and in another series the thirtieth was used. The report said that the difference between the two cases was very marked indeed, and that far better results were obtained with the thirtieth than with the lower potencies. With regard to repetition of dose that was a very important matter. Hahnemann's rule not to give a second dose of a drug while the first was acting was a very difficult rule to apply in cases of acute disease. It required a great deal of courage to carry out the rule when they might be hesitating what to do in an urgent case. It was a thing they should aim at, but he thought it was a case in which some modification of the rule must be introduced. With regard to

Dr. Moir's paper, he had in his experience seen cases that were to all appearances most undoubtedly pneumonia, apparently aborted by the use of *Aconite*. With regard to the homœopathicity of *Bryonia*, it was one of the few drugs which had actually produced hepatization of the lung in animals, as in the case of sheep which had fed upon the plant. In considering the statistics of pneumonia under any method of treatment, it must be recollected that, owing to the epidemics of influenza which had been recurrent in the last twenty years, pneumonia was seldom seen without complications.

Dr. Millér Neatby said he thought that they might well learn something from the old school. Although they had attained excellent results by their system, and results which compared favourably with those of the older school, there was still a good deal to be done. A good deal of the excellence of the results at the London Homœopathic Hospital was due to the nursing, not merely the ordinary nursing of the trained nurse, but that which was the result of the training they received from the doctors with regard to special diseases. In pneumonia it was of the utmost importance that the patient should be kept at rest. He had been edified by the views of teachers of the old school on this subject. If any of them had the misfortune to be stricken down with lobar pneumonia, he did not advise them to submit to a line of treatment which advocated an elaborate oral, nasal, and pharyngeal toilet repeated three times a day. It would be a very robust patient who could stand that treatment. Dr. A. Latham was one of the strongest exponents of the necessity of disturbing the patient as little as possible in the first week of pneumonia, and he deprecated frequent examination after the first examination had been made, and the case definitely diagnosed. He (the speaker) thought they lived up to that ideal pretty well at the Homœopathic Hospital. Dr. Moir had raised the question of vaccine treatment in pneumonia, and it was interesting to recall that Dr. Latham had treated a number of cases with pneumococcus vaccine, and claimed to have aborted cases on the second, third and fourth days in much the same way that Dr. Bodman and Dr. Ord had claimed to have done with homœopathic drugs. He (the speaker) thought that there was real scope for the use of pneumococcus vaccine in cases where complications might arise such as empyœma and infective endocarditis, and it might be a good thing to make the vaccine fairly early in the disease in order that it might be utilised in such cases. Dr. Moir had spoken of cases in which delirium supervened at an early date, and in which expectoration was absent. Such patients were described as robust patients, but he thought that very often they looked more robust than they were. He thought that in cases of that sort homœopaths did rather score. Some cases were regarded as absolutely hopeless by the older school, cases—e.g., where lobar pneumonia was complicated by bronchitis in the unconsolidated part of the lung. Many of those cases certainly recovered under homœopathic treatment and it was often there that *Antimonium tartaricum* was of so much benefit. He

thought there was no doubt, too, that they scored in aborting cases. That was no doubt also the experience of homœopathic practitioners in regard to many other diseases.

Dr. G. Blackley remarked that while so much had been said in praise of the papers, he would venture to suggest, having had a little experience in the treatment of pneumonia, particularly in hospital, that there was one aspect of the subject they should not lose sight of. In the first place the type of pneumonia they had had in England since the advent of influenza had changed very much. They did not get the pure sthenic type. They had cases of pneumonia following influenza but they did not behave as they used to do, when they had what he should call the pure lobar pneumonia. He was also judging by his experience in Vienna. The type seen in Vienna and any country which was somewhat remote from the sea, was different from that seen in a moist atmosphere like that of England, which, he took it, was also the case with the United States, where in an extremely dry climate there was more of the pure lobar pneumonia than in England. In the three papers perhaps there had not been sufficient stress laid on the fact that in children and in old people, just as in cases of pneumonia following influenza, they did not get typical cases of absolutely pure uncomplicated lobar pneumonia. The reading of the papers had brought to his mind certain ideas of his own, which he had entertained for a long time, and which those who had been about the hospital for the last fifteen or twenty years, knew he entertained. He was strongly of opinion that the use of *Aconite*, and in the same way nowadays, of *Veratrum viride*, in a case of pure lobar pneumonia, was simply a waste of time. The only thing that he could say in favour of *Aconite* was that it set the skin going, and that tended to render respiration deeper, which enabled the patient to take advantage of the oxygen in the air. To begin with *Aconite* or *Veratrum viride* as a matter of routine was, to his mind, a great waste of time. The old-fashioned remedies such as *Bryonia*, *Phosphorus*, and *Antimonium tartaricum* did all that was necessary as a rule. Dr. Ord had alluded to the fact that sheep fed on Bryony got lobar pneumonia. That was verified many years ago by Dr. Curie, who administered the  $\phi$  tincture to rabbits, and at the post-mortem examination, patches of lung were found which were indistinguishable from lobar pneumonia. In the case of poisoning by *Phosphorus*, the same thing occurred; a condition indistinguishable from lobar pneumonia arose with hepatization in large patches. For bringing down the temperature he had found *Agaricus* most effectual. Then, as to "spauking" of children, he thought it a most excellent remedy, and had heard of nothing which appealed to him so strongly for some time. The mustard bath, he thought, had the same effect.

Dr. Cash said he had found *Sulphur* very useful, also *Chelidonium*. In cases where the liver was affected, he had found *Chelidonium* do a great deal of good, and the lung was cleared up in a very satisfactory manner. He should be very sorry to discard the poultice, which had often started



a course of improvement, when other remedies had failed. It might act as the mustard bath, and have the effect of bleeding the patient into his own capillaries.

Dr. Johnstone said he had occasion a few months ago to be associated with one of the leading authorities on children's diseases, one of the physicians of the Great Ormond Street Hospital, in a very bad case of pneumonia, of the lobar type, in a child nine months old. The treatment was: no steam kettle, no medicine except *Nux Vomica*, raising the child up every few minutes. The child was in a somnolent condition and was lifted up and kept moving. It was one of the most serious cases of pneumonia he had ever seen, and the child got well. The *Nux Vomica* was given solely to assist the cardiac muscle. There was no doubt the old school was in a bad way for remedies, and it was refreshing to have evidence of the good done by homœopathic remedies, such as they had heard that day. This statistical evidence had come from the children's department. The hospital had provided statistics in diphtheria and now in pneumonia, and they hoped the children's department would lend them still further aid in helping to substantiate the value of Homœopathic Therapeutics.

Dr. Moir, replying to the discussion, said that in late years until quite recently there had been sceptical questioning as to medicines being able to influence the course of infectious disease. It was expected to run its course, and that no medicine would do much good. It was the vaccine work which had opened their eyes, and they now saw that they could abort such cases. *Aconite*, to be successful, must be used in early stages. In hospital cases it was usually of little use, because the cases were seldom received until the early stages were over. *Veratrum viride* had over and over again been of the greatest use to him. He was hoping to have heard more in the discussion about the vaccine treatment.

Dr. Roberson Day, also replying said he drew up the statistics with considerable pains, endeavouring to make them accurate. One of the hospitals with which he compared results was next door, and drew its patients from exactly the same area. Surely, they could not have anything more fair than to compare your work with that of your next door neighbour. There was that loop-hole for error, that the statistics were taken over a period of ten years, whereas those of the other hospitals related to one year only, but as they got greater evidence they must draw from those sources for proof.

With regard to the results of treatment, unlike some of the speakers, he felt them to be most satisfactory, and by way of illustration he mentioned the case of the child who had recently come under his care, suffering from advanced pulmonary consumption. She had been previously treated at several institutions, and had the benefits of sanatorium treatment; but notwithstanding she had steadily got worse, and all the doctors had given her up. She had a hectic temperature, racking cough which disturbed her sleep; was so weak she could scarcely walk

and appetite was poor. After a few weeks' treatment the temperature settled down about normal, the cough left her, appetite and strength returned, so that she is now able to walk a considerable distance, and she has gained weight. All these signs of improvement have taken place while she was living at home, without any special fresh air or sanatorium treatment. Could anything be more satisfactory or more clearly demonstrate that the change of *medical* treatment was alone responsible for the improvement.

The business part of the Congress was then proceeded with.

Dr. Roberson Day was unanimously elected President for the 1912 Congress, it being decided to merge with the International Congress next year.

It was decided to leave the place of the next Congress to the Council.

Dr. Dyce Brown was re-elected honorary secretary, and Dr. Burford honorary treasurer.

The four unofficial members of the Council were re-elected and the Cancer Committee was continued in office.

The proceedings concluded with a vote of thanks to the President for his able occupancy of the chair.

The visitors then availed themselves of an invitation from Mr. and Mrs. F. G. Smart, to a Garden Party at their charming residence, "Bredbury."

Subsequently many visited the Homœopathic Hospital.

The annual dinner was held at Earl's Court Hotel in the evening, under the chairmanship of Dr. Frédéric Neild.

The dinner over,

The Chairman submitted the toast of the King.

Dr. Macnish proposed the next toast, "In memory of Hahnemann," which he said always appeared in the programme of their annual dinner. In this year of 1910 it was very appropriate that it should be proposed, because in 1810 Hahnemann published his famous work *The Organon*, in which they found the principles of their belief promulgated and enunciated in the marvellous manner of which Hahnemann was alone capable. On July 2nd, 1843, he died in Paris, so that sixty-seven years had elapsed since he passed away, and a hundred since he published his great work. When they remembered the history of Hahnemann, and of all great men, the almost insurmountable obstacles in their path, the oppressions and brutalities to be endured, one could not but wonder at the marvellous tenacity, perseverance and industry Hahnemann displayed. They owed him a debt of gratitude they could never repay, and he might be excused for quoting the national poet of Scotland:

The bridegroom may forget the bride,  
Was made his wedded wife yestreen ;

The monarch may forget the crown  
 That on his head an hour has been ;  
 The mother may forget the child  
 That smiles so sweetly on her knee ;  
 But I'll remember thee, Hahnemann,  
 And a' that thou hast done for me.

The toast was honoured in silence.

Dr. Herbert Nankivell submitted the "Progress of Homœopathy," a toast which was heartily honoured.

Dr. Pincott at this point announced that letters of apology had been received from several persons. He would like to say at the commencement how sorry they were not to have Dr. Dyce Brown with them. He was kept away by illness, and was missing his first Congress for twenty-nine years. He had also received a letter from Mr. and Mrs. Smart, whose kind hospitality they enjoyed that afternoon. They did not feel their strength would permit them to come that evening, much as they would have liked to do so. Another was from Mr. Langton, the chairman of the hospital, who, in consequence of illness, was unable to be with them. Others who had written were the Rev. D. J. Stather Hunt, Mr. Mewburn, Mr. Brackett, and Dr. Clifton.

The Chairman said he would not let the moment pass without referring to the absence of Mr. Langton, who was kept away by illness, but who, he was thankful to say, was better that day. They owed him a great deal in Tunbridge Wells so far as homœopathy was concerned.

Dr. Goldsbrough proposed "The Tunbridge Wells Homœopathic Hospital and Dispensary," and coupled with the toast the names of Dr. Grace and Dr. Pincott.

Dr. N. Grace, responding, remarked that he had been called upon to take Mr. Langton's place at short notice. Those who knew Mr. Langton would see that the task was impossible for him physically, mentally and morally. Mr. Langton was a big man in every sense of the word, whose place it was quite impossible for him to take. He could only thank Dr. Goldsbrough for the kind things he had said about the hospital, and to wish from the bottom of his heart that they were worthy of all he had said about them. Personally the Congress had been a great incentive and stimulus to him, and he thought it would be to the hospital and the staff working there.

The Chairman, in calling on Dr. Pincott to reply, said he would like to remark how much they all owed to him for his work in connection with the Congress. The office of local secretary had been no sinecure, and they would listen to Dr. Pincott's words with peculiar pleasure.

Dr. Pincott, who was cordially greeted, said he was obliged to them for the manner in which they had honoured the toast of the hospital. He would have liked it to include all their hospitals, for they were all

aiming at the same end, and, he believed, in every case with the same energy. This one at Tunbridge Wells lay very near to his heart, as he believed he was the first medical man in the town to whom the news was given that they were to have one. It came from a dear old friend of Dr. Neild and himself, the late Mr. Reilly, who was its founder. Through his initiative they were enabled to get a hospital of which they need not be ashamed. They thought a great deal of that hospital. At that time Mr. Thomas Oetzman was the secretary, and worked most indefatigably in its interests. At his decease Mr. Whiteley, whom he had hoped to see with them that evening, undertook the secretaryship, and put in a great deal of work for them at the time of the removal of the hospital from Upper Grosvenor Road. to the present situation. Then he (the speaker) held office for two years and learned some of the work involved in being a secretary to a hospital, until the Committee secured another gentleman to take over the work for a time; after which, fortunately for them, Mr. Vinall came to their rescue, and he was with them still. They owed him many thanks for what he had done. It was sometimes said that the less they had to do with lawyers the better, but lawyers had been very good friends to their hospital. The work it was doing was, he thought, very highly esteemed, and they were the best of friends with the General Hospital; indeed, when the latter had an outbreak of fever they appealed to the Homœopathic Hospital to take in any cases of urgency that might come to them. He thought the hospital had done a great deal of good in the town, and they felt stimulated to go on and work even harder than they had done in the past. At any rate they would endeavour to maintain the prestige they had already gained, and he trusted that when the Congress met at Tunbridge Wells again they would find an even larger hospital had been secured. They were anxious to pull down the front part of the building and rebuild it and here was an opportunity for any gentleman with means to come to their help.

Dr. Wyne Thomas proposed "The Guests and Visitors," and spoke appreciatively of the presence of the ladies. They regretted the absence of the mayor of the borough, but he was very well represented by the deputy mayor, who welcomed them so warmly that morning. Likewise they greatly regretted the absence of Mr. and Mrs. Smart. He did not know if they were to look upon Mr. Smart as a guest or visitor. He thought they might almost term him an "old boy," because in days gone by he was one of them. He suggested that a cordial expression of thanks should be sent to Mr. and Mrs. Smart from that gathering for their kind hospitality that afternoon, and regret that they were unable to be present that evening.

Alderman H. M. Caley, whose name was coupled with the toast, replied, as also did the Rev. Dr. Townsend.

Dr. Theophilus Ord proposed the health of the President.

Dr. Neild, in reply, said that with a very full heart he thanked them for all their kindness to him that day. It was overwhelming and far

more than he could have expected or deserved. Their kindness had been much more than reward for what he had tried to do with the help of his colleagues. Dr. Dyce Brown had been like a general in his tent, and had conducted a great deal of the work of arrangement from his house, and that help had been supplemented by the assistance of Dr. Burford. He trusted that the next Congress would be equally successful, and that at some future time his colleagues, if not himself, would have the pleasure of welcoming them again to Tunbridge Wells.

The proceedings concluded with the singing of the National Anthem.

During the evening some capital music was given by Miss Gladys Duncalfe, Miss Lucy Hilary, Miss Mabel Greensted, and Mr. Stanley Butter, and was greatly appreciated and enjoyed.—The *Homœopathic World*, August 1, 1910.

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Vol. xxix.] **December, 1910.** [No. 12.

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ATHANASIA.

By THOS. BASSETT KEYES, M.D., of Chicago.

*(Concluded from November issue.)*

*Defective Liver Functions and Static Fat as Conditions  
Preceding Senility.*

The liver becoming atrophied in the aged, as we have previously mentioned, we find that it acts as an impedance to the circulation. To compensate for this the heart becomes slightly enlarged. In this condition it will be agreed that there is a loss of energy, as in a rusty machine. In treating diseases of the heart the liver should receive its due share of attention. Liver atrophy takes place first in those whose habits of assimilating fat have always been defective, or in those who are thin. As the scale advances to healthy fat exchange, we find liver atrophy less. To liver atrophy, with its consequent defective fat assimilation and lessened aid to fat growth we find that conditions of senility are mainly due. The decrease in fat and the increase in poisonous material together with the products which are absorbed from an increased putrefaction of intestinal contents, owing to deficiency of the liver, lead to necrosis of tissues.

Static fat is a term which I apply to certain conditions of fat stasis, and consequent decay or lack of vitality in all other tissues of the body, because in this condition the fat does not

so readily yield its carbon in exchange for oxygen, consequently the oxidative or combustive power of the individual are deficient. There is lack of cell activity and not a rapid chemical decomposition, which conditions are always reached by those who possess even a moderate amount of fat. These conditions are always reached by every individual just before and preceding senility.

Degenerative changes or conditions which go before old age are characterized in fleshy individuals by static fat or fat which does not yield to the production of cell activity, due largely to liver deficiency. The fat tissue of all individuals after the age of forty, for a certain period becomes more miserly, as it were, and does not give up its stored treasure so readily. The body seems to be saving this stored food for a later period in life, which follows shortly, and in which assimilation of fats becomes gradually more deficient as it does in advancing age, because of increasing liver atrophy.

Healthy, rich, oily fat is a storehouse of heat and energy which in the young is readily drawn upon to produce great kinetic energy. This is characteristic of the highest degree of health. But as age advances sooner or later we find a condition of static fat which ordinarily will not yield itself to produce kinetic energy, heat and life.

Aristotle, whose mother-tongue was Greek, says that the "period of each existence is its aeon." Time is said to move in a circle, on account of its likeness to an Aeon; hence an aeon and a circle or cycle are analogous.

The seasons of the year, time and night and day are brought about by movement. There is the end of one period and the commencement of another. These ideas and comparisons of life with motion have been received from time immemorial. It was so taught from the rusty ages of Egyptian physics and celestial geometry, as well as by the metaphysics of the ancients.

Time, says Plato, finally is the moving image of eternity. But the foundation of the image is planetary, or stellar mo-

tion, and on this basis of visible things he sought to establish all that was invisible, including the human soul.

"The generative and salutary part of nature hath its motion toward him (Osiris) and in order to procure being; but the destroying and corruptive part hath its motion from him, and in order to procure not-being." \* \* \*

As likewise on the other hand again, they use terms opposite to motion by way of reproach; for they called that clogged, tied up, locked up, and confined nature, from Jesthai and Janai (that is, from agitation and motion), Kakia (baseness or ill-motion), Aporial (difficulty or difficult motion), Deilia (fearfulness or fearful motion), and Anina (sorrow or want of motion). As corruption locks up and fixes Nature's course, so generation resolves and excites it by Means of Motion, *Plutarch, Morals*, vol. IV., p. 119, London, 1704.

The simple foundation for this doctrinal abstruseness is that the early men perceived and taught that there was a time to go, and a time of arrest.

The water of life flowed, was a living motion, and motion was equivalent to generation, whereas corruption, as Plutarch has it, "locks up and fixes Nature's course," and this corruption was that of the dead water the Typhonian torpidity, which required to be aroused by means of motion in generation. Subcutaneous injections of oil should be used to overcome the torpidity of motion in the liver and fat, and thus increase and lengthen the aeon of life.

The three simple bodies which have frequently represented life are fire, air and water, each of which (says Harvey) by reason of its ceaseless flux and motion are expressed by the words flame, wind, and flood.

Flame is the flow of fire; wind the flow of air, stream or flood the flow of water, and energy in man is the flow of carbon dioxide from the used fat of the body. Stagnant water is spoken of as dead water and running water as living water.

Hippocrates designated that which is now generally known as spirit as the *impetum faciens* or moving power.

Energy is the result of fat or carbon exchange for oxygen. Oil is a hydro-carbon and is excreted almost entirely by the lungs. Muscular action or contraction liberates carbon dioxid from the used oil of the fat, from in and around the muscles and fibres. This is taken up by the venous blood and the carbon dioxid is given off by the lungs which in turn receive and give oxygen. It is a chemical change, and if the exchange of oxygen exceeds the supply of fat or carbon exchange which our bodies can afford to give we become tired, the muscles lose their power of contraction and should the condition continue for a long period, then all tissues of the body become weaker and we suffer from mal-nutrition, anemia, and are subject to many diseases.

People who are deficient in energy are deficient in combusive or oxidative powers. In the great majority of cases these combusive powers are deficient for want of fat to excrete. Combustive powers are also often deficient in those who store up too much adipose, and in these conditions, in place of burning up the fat to make vital energy and spirit, it is stored in the body in excessive amounts. One phase of static fat is that condition which we find in fleshy people who after the age of forty, lose their energies to a certain extent, because, here the fat does not yield itself readily to oxidation or combustion, and is not readily replaced owing to insufficiency of liver functions.

In the blooming period of manhood and in women before the change, there is during the period the best of their oxidative or combusive powers. With many individuals there is a more eternal energy, a more immense power. At this period our minds picture all the riches of the rising sun, our ambitions are fired and keen, we are stronger and quicker than the youth and more keen of perception. "With happy fires our cheerful hearth is crowned."

But later in life as oxidation or combustion becomes more tardy, owing to loss of fat assimilation, or movement from defective liver function, due to absorption of poisons from the

rectum as already given, then as this proceeds we lose our keenness and interest, become old, and as oxidation decreases. the joy of all senses and of living becomes less.

Old age is recognized by a slow atrophy of the body and a gradual diminishing of metabolic powers. The amount of carbon dioxid excreted by the lungs gradually diminishes after the age of forty, because fat assimilation gradually becomes deficient.

With most people after the age of forty and as age advances, the fat becomes more serous, or of a more watery and less oily nature. The fat is, therefore, flabby. The oily fat of the body will supply for some time the carbon dioxid or used power which is excreted by the lungs. The oily fat is stored energy, the energy of the fat depending upon its richness in oil. As the fat from the body is gradually absorbed or becomes watery and flabby, and as the fats from the diet are no longer so well assimilated by the aged, owing to liver atrophy, the amount of carbon dioxid excreted by the lungs must gradually diminish, for the body no longer contains the fat or hydro-carbon to produce carbon dioxid, for excretion. The fat is gradually absorbed from in and around muscular fibres which, consequently, lose their elasticity, for they are then like tired and overworked muscles. They have lessened carbon exchange. When the fat is used from the muscles, even in the young, they lose their power of contraction. As the amount of carbon dioxid excreted is diminished, in proportion to this, diminishes the power of elasticity and contraction of all bodily tissues. In the aged the quick recuperative powers are lost, because of deficient liver function, fat is not absorbed from the diet in sufficient quantity to meet the demands of the body.

After the age of sixty it is rare for the brain to execute anything original. Intellect is exerted only on things formerly learned and even though they be false lights they are followed as a habit of thought. Fixed attention tires the senile, and memory becomes less retentive. It becomes harder for



them to take up new ideas. There are exceptions. These exceptions are usually found in those persons who still assimilate fat well, and consequently they have greater powers of energy and life and have not become senile. The white and gray matter of the brain are of an oily substance and, by keeping the body well nourished with oil, the brain certainly should be better supplied.

Because of defective liver function there is a lack of fat in the tissues. They grow drier, more rigid, become smaller in texture and fibre, and bulk, shrinking and shriveling, leaving the skin loose and wrinkled. This lack of fats for combustion causes the cells of the body to lose their heat and energy and thermodynamic powers. According to Von Noorden (p. 434, *Metabolism and Practical Medicine*), the minimal metabolism in old age falls to 20 to 30 per cent of the normal. The lungs shrink in size, because their use has diminished, not having so much fat or carbon dioxid to exchange, and bronchitis develops, so that we may have the wheezy old man. When the lungs have more fat to excrete, as they do when subcutaneous injections of oil are instituted, bronchitis and other senile conditions are overcome.

The senile muscular and nervous tissues contain less fat, are rough and dry, and particularly is this true in sclerosis and atheromatous arteries. In this latter condition its pathology often shows that oily globules are sometimes deposited with the calcareous matter, this being nature's endeavor or plan to live on, soften the hard substances, and overcome the disease. Senility with its loss of power and vigor and shrinkage and shriveling of tissues has been explained to be due to a variety of causes. Thus Demange ascribes old age to arterio-sclerosis. Atrophy of the thyroid gland has been credited as a cause of senility by Lörand and Horsley. Others have thought that the organs of generation had their influence in the production of senility; still others have regarded atrophy of the intestines as the cause. But all of these conditions may be directly traced to lack of fat due to defective liver function

caused as already stated by absorption of materials through the portal system, from the rectum.

As we have pointed out all along, imperfect and altered nutrition due to insufficiency of liver function, which the body has gradually poisoned, characterizes old age. Not only do all the parts, even the bones, shrink and grow lighter and dryer for want of fats and carbon exchange, but the absorption vessels become small, wounds do not heal readily. The skin becomes colder, dryer, and scaly, with red patches, and ecchymosis is readily induced, and this is all due to lack of assimilation of fats and oils.

Because of the lack of fats and carbon exchange and consequent lack of richness and cell activity of the blood, all parts lose their rich vascular supply; even the brain, which is so slow to give up its oily substance, now is not so rich in its fat, becomes harder, loses its fullness and turgescence, and as a result, its activity ceases. Memory for names is weakened, the power of combining ideas lessens, as the cerebral parts change. New impressions are not easily made, and as age advances and the cerebral tissues become more inert, the old man takes delight in reciting repeatedly the adventures of his youth but does not remember the occurrences of the previous day. This may go on until finally it results in insensibility and dementia, and goes on just in proportion to the body's loss of oil or carbon exchange. As old age advances, the structures become harder, because the fat is not there to diffuse through tissues, muscular parts become tenuous fibrous membranes, cartilaginous and cartilages bones, and bones become filled with bony cancellous tissue. The lining membrane of the arteries and serous membranes become harder and the lenses of the eyes show this hardening or sclerosis. In thin people arterio-sclerosis is more general throughout the whole body and leads to still further malnutrition and emaciation. The better nourished in body the aged person is the less likely he is to sclerosis. As the graduation in nourishment becomes lessened to that of flabby fat, we have a type of sclerosis

which is not so general as in the thin and emaciated person. It will, therefore, be seen that arterio-sclerosis and sclerosis of the tissues are all dependent upon lack of fat in and around tissues, and the greater the lack of fat and oil in the fat (as flabby serous fat), the greater the sclerosis. This being so, subcutaneous injections of oil meet the conditions of advancing age.

As emaciation increases, we are at last "Sans teeth, sans eyes, sans taste, sans everything." The power or life of the body now rapidly declines because the power of absorbing fat and aiding the growth of fat from other foods is lost. It has been said that if we should live long enough we would gradually shrink until we were no larger than a flea.

From all the foregoing, which is but a brief outline of advancing age, it must be granted that the conditions are due to a lack of assimilation and intercellular starvation of tissues, brought about by atrophy of the liver and defective function of that organ which has been induced by slow absorption from the rectum by the portal circulation.

#### *The Weakened Link.*

It will thus be seen that the weakened link between the blooming period of life and senility is an atrophy of the liver and diminished liver functions, due to the absorption of bacterial flora and our own secretions from the lower bowel. Thus the liver function finally becomes so impaired that it is unable to assist sufficiently in the absorption of fats from the diet by the aid of its bile, and unable to convert other foods sufficiently into glycogen for the growth of fat. Without these there is lack of sufficient heat to carry on vital functions (as has been abundantly shown by experiments already referred to upon dogs, where the bile has been diverted from the alimentary canal), and senility advances.

This seems to be Nature's original law and original contract. The question is can we overcome these conditions and produce longevity? I think that we can, and that the riddle is solved. The method consists in purifying the mucous mem-

branes with Nature's antiseptic, made in Nature's laboratory our own bodies, which is oil; in the stimulation of cell activity through subcutaneous injections of oil; and in the limitation of nitrogenous food upon which the growth of bacterial flora depend, and in increasing the hydrocarbons. One thing is certain—that no method of treatment meets the advancing conditions of senility as does this method. Nor have the miracles of healing shrines, ancient or modern therapeutic methods ever equalled the results obtained in the cure of a large number of chronic diseases of the constitution.—The *Medical Counselor*, November 1910.

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## THE TOTALITY, OF SYMPTOMS.

BY GEORGE ROYAL, M.D., DES MOINES, IOWA.

I have often wondered whether Samuel Hahnemann realized how hard a task he was imposing upon his followers when he penned the latter of the two sentences which make up the 18th paragraph of his Organon.

I have also wondered whether other teachers and practitioners have found as many difficulties in that sentence as I have.

“The totality of symptoms observed in each individual case of disease can be the only indication to guide us in the selection of a remedy.” We read the words for the first time and say: How clear the statement! How easy will be the task! We read the sentence the second time and the word *totality* attracts our attention. What does Hahnemann mean by it? Does he mean the numerical totality? Can symptoms be added like figures? Can they be counted like eggs? Can they be measured like lace? Can they be weighed like sugar? Can a symptom be considered a unit of any standard? We read the sentence a third time and observe that totality is simply a modifying word, that the important word is symptom, a word which Hahnemann has defined as that which “is to be discerned in a disease presenting no manifest exciting or

maintaining cause for removal," that which "is outwardly discernible through the senses" and "the changes in the sensorial conditions of body and soul."

This leads us to try our hand at a definition, and we say that a symptom is a manifestation of disease only to raise the question what is disease? Not wishing to be bothered by this last question we dismiss it with: Disease is any variation from the normal in the physical, intellectual or spiritual man; again trying to run away from the question, what is normal, we note that the word symptom is in the plural and our old question comes to us in new form and with added force. By symptoms does Hahnemann mean more than one of the same kind or does he wish to imply that there are several kinds?

In the triune man do the symptoms of the physical differ from those of the intellectual or spiritual? Or again, do the symptoms of one physical man differ from those of another; or one intellectual from another; or one spiritual from another? Or still further, do the symptoms of any one of these three differ at different times and under different conditions? While our mind is framing an answer to these questions the eye, scanning Hahnemann's sentence, catches two other words which seem to throw light upon the subject. The words are "individual case." To answer the question, at once, and avoid further annoyance we tell our students, our fellow practitioners and ourselves that these are the two words of the sentence which need emphasizing. We then proceed to talk glibly about the fact that individualization is one of the cotollaries of the law of similia. Therefore, we say that we must not only recognize the fact that each individual is made up of three parts—the physical, intellectual and spiritual, and that these parts may each and all present abnormal conditions, but that each composite individual differs from every other composite individual. Now all seems clear. It was not the word "Totality" but the word "Individual" which should have been studied. At this point there comes from the back row of seats: "But, professor, what about that little arithmetical problem in addition in this process of individualization? Are symptoms

then all alike, all of equal value in the totality and in the 'individual case?' What are the essentials of a symptom? Can and should symptoms be classified? Would a knowledge and classification of symptoms assist us in proving a remedy; in studying a remedy, in prescribing a remedy? If so, how and why?"

In answering the above questions let us begin with the essentials of a symptom. They are: location, sensation, and modalities. They are all interdependent. Location is the most important, but location does not refer to an anatomical region like the chest or hip, but to a tissue like the mucous membrane or an organ like the kidney. We all know that different diseases choose different tissues or organs through which they manifest themselves. As example, we may take diphtheria (blood and mucous membrane of throat), typhoid fever (blood and Peyer's patches). In the second place, we all know that different diseases present different manifestations in the same tissue. You may have ulceration in both diphtheria and typhoid, but there is no organization of exudate into membrane in the typhoid. The chemical and microscopical examination of the blood in typhoid and pernicious anæmia present different manifestations, and finally we must recognize the fact that these manifestations may present either an irritation, an inflammation, a functional change or a structural change of some tissue or organ. It does not seem possible for some diseases to produce anything more than an inflammation, while it is difficult to arrest other diseases until they have caused complete destruction of the tissue or organ which they affect. It seems convenient, therefore, that we agree to understand by "location" that essential of a symptom which informs us which tissue or organ the cause of a disease may select through which to exhibit its peculiar pathognomonic manifestation, and still further to what extent the cause can produce results.

**Sensation.**—The second essential naturally follows the first, in the explanation of a symptom, but is not as important as the third, in determining the rank of a symptom. We find in disease such sensations as shooting, burning, sticking, throbbing, pulsating, choking, numbness, weakness and others. These should

all be understood, and the best way to understand them is to study them in relation to the tissue or organ involved. Let us take a lightning-like, shooting pain. To the initiated that means that a nerve is being used to manifest what the disease is doing, that there is some irritation of that nerve along its course. You make pressure along the course of the nerve. There is no soreness, no sensitiveness and you say it is simply an irritation—neuralgia. Should there be found soreness and tenderness you say there is inflammation—neuritis. Going still further you get weakness and you say functional changes, and still further on you get paralysis—atrophy, and you say structural changes of the nerves. In like manner we interpret a sharp sticking sensation to mean an ulceration, a throbbing, pulsating pain to show the result of disturbances in the circulation, the intensity of the sensation showing whether the organ is encapsulated or not, or whether the congested or inflamed tissue or organ be dense and firm or loose and flabby always bearing in mind the nerve supply. A good example is the excruciating pain of whitlow.

*Modalities.*—Anything which aggravates or ameliorates the sensations, whether it be time of day, month or year, telluric influence, thermic changes, the position of the body, eating, drinking, mental or physical exertion, etc. Many of these modalities are easily explained—*e.g.*, it is easy to see how the circulation of the part may be affected by the position of the same. The throbbing, pulsating pains of a whitlow may be greatly aggravated by letting the hand hang down, the rectal ulcers by the act of defecation, etc. The same is true of the effect of food taken into the stomach, which will assist us in determining whether we have gastralgia, gastritis or gastric ulcers. Unfortunately all the modalities are not as easily explained. I never could understand and therefore cannot explain why, in diphtheria, the pain constriction and soreness should be on the left side and aggravated by hot drinks under lachesis, while the same sensations should be on the right side and aggravated by cold water under lycopodium. If any of you can and will explain, I for one will be profoundly grateful.

## CLASSIFICATION OF SYMPTOMS.

I think we are now prepared to say that a classification of symptoms will be of help. We will divide them into the following classes: Dynamic, Physiological, Pathological, Toxicological. While attempting to define and show the advantage of such a classification let us keep in mind the statement that a symptom is only a manifestation of disease; that it bears the same relation to disease that the withered leaves, charred branches and splint-ered trunk of a tree bear to a bolt of lightning. We realize that any or all of the above classes may intermingle with any other, but we hope to show that they differ in importance and should be assigned to different rank in making up the totality. Let me use a few authenticated cases to illustrate my meaning.

## DYNAMIC.

An individual, apparently normal in every particular, about her usual duties is abruptly and brutally informed of the sudden death of her mother and husband. A cry, a fall, a change; the spiritual man has severed his connection from the intellectual and physical. Again, the triune man is standing in a field during an electrical storm. Without even a cry he falls dead. The same separation has taken place. Up to the instant of the shock no change had taken place in the intellect, and in neither case did a careful minute examination, post-mortem, reveal any change in tissue or organ of these two bodies.

One other, the triune man, a train dispatcher, with dark hair, mentally clear and reliable, for some unaccountable reason failed to switch a train. A whistle! A collision with the usual results! In this case, the spiritual man remains with the other two, but that black hair is changed to white in 48 hours and that clear, reliable mind is clouded and unreliable. Every time that man hears a whistle he becomes a raving maniac. Here are your two extremes of dynamic cause of symptoms. You are all familiar with what may take place between these two extremes. What is this "dynamic spirit-like force" which produces such results? If any of you can state fully, definitely, clearly, do so. I cannot. But that this class is the most important I do know and that one



symptom of it may outweigh a score of those of the second, in the totality, I also know.

#### PHYSIOLOGICAL.

Let us take the function of the sweat glands for an illustration of the second class. We all know the difference between a profuse warm, critical sweat which marks the termination of some cold or fever and that profuse cold, clammy sweat which, in shock, in the crisis of pneumonia or in acute dilatation of the heart, warns us that every available resource must be used to save our patient's life. By knowing the value of these different manifestations of a perverted function we may form some idea of the rank in the totality.

#### PATHOLOGICAL.

As a result of this form of variation we have ulcers, tumors, atrophy, hypertrophy, changes of the blood, of the secretions, of the excretions, etc. It is by a knowledge of these conditions that make our diagnosis of disease or, to put it in the words of the Organon, determine each individual case.

#### TOXICOLOGICAL.

Familiarity with this class of symptoms is essential not only to assist in our diagnosis and thereby, in some cases, save life by administering the proper antidote, but it is also essential to the selection of the indicated remedy. This we will demonstrate later when we make our application of the advantages of our classification.

We apply other terms to manifestations of disease, such as objective, subjective, common, pathognomonic, etc., all of which vary in importance, a knowledge of which is essential to obtain the real totality. We have not time to further discuss them, but before we make an application of the above knowledge let us remind ourselves that a symptom is simply a manifestation of disease; that it is not the disease, nor even the cause of the disease; that the essentials of a symptom, which enable us to understand it, are: location, sensations and modalities. Finally, for the purpose of assisting us to apply our knowledge of symptoms,

we divide them into dynamic, physiological, pathological and toxicological.

Let us also understand the above to be the manifestation in each *individual case* of disease, the result of some cause other than drugs, and that these are the only indications to guide us to the selection of a remedy.

#### REMEDY.

The word remedy should include all adjuvant treatment used in connection with a proved drug. We will, however, exclude surgery, but with this understanding, viz., that the proved drug is often of equal importance with the instruments in many surgical cases, especially in the preparatory and after treatment. The effect of heat and cold, of position, of diet, of exercise, etc., must all be taken into consideration when we select the remedy, because they are our modalities of the proved drug. We will define remedy as used by Hahnemann, in our sentence as: Any substance which when given to a healthy person has the power of causing variations from the normal, of any tissue, or of any function of a tissue or organ. By *proved* we mean that a drug has been administered to a healthy person and the effects carefully observed and properly recorded. These manifestations we call symptoms of the remedy. Hence we speak of the symptoms of a disease, also of the symptoms of a drug or remedy. In order to facilitate matters we will use the same definition and classification of a drug symptom that we did of a disease symptom, viz., three essentials, four or more causes. However, we use the word characteristic instead of pathognomonic when we wish to designate a drug symptom of highest rank. I want to impress more forcibly upon you the first essential—location. I give it the first place in my drug proving, in my study and teaching of remedies, also in my use of remedies. To me, the “elective affinity of drugs” is the greatest corollary of our great law. Let me use the words of one of our best students and prescribers on this point. He says: “The action of a drug is the action of a living thing which can think and act.” Let me state a few facts as evidence of the truth of the above statement. Take a seed of

aconite, podophyllum and gelsemium and plant them in the same soil. From the time the first shoot appears from the seed they receive the same sunshine, the same dew and rain, and the same air and elements from the soil. Yet every one selects from the above just what it needs to mature itself and remains aconite, podophyllum and gelsemium to all time. Every plant is composed of cells, every cell of atoms and ions. The ion or atom has all the properties of the cell. Every cell has all the properties of the entire plant. What is true of plants is true of minerals, of acids and also of animal drugs which we prepare and use as remedies. We will show later on that the same something (we used to call it active principle of a drug) which can select from its surrounding just what it needs to mature, perfect and perpetuate itself, also selects some definite ion, atom, molecule, cell, tissue or organ of the living human body upon which it expends its force. Thus we observe that the *something* of a remedy selects some tissue or organ through which to manifest itself.

#### PROVING.

Let us now return to the second part of our student's question: "How can the knowledge and classification of symptoms assist us in proving drugs?" Such knowledge and classification of symptoms will assist the drug prover to determine what tissue or organ is affected by the drug which is being proved. As has already been stated, the sensation informs the prover not only what tissues are involved, but also what changes are taking place in the tissue. The pulsating, throbbing sensation signifies congestion or inflammation.

By changing the position of the affected part of the prover and noting the result the director can determine which of the two conditions exist. Again, the splinter-like pains in the nose indicate that ulceration is taking place and leads the directors to examine and ascertain whether the ulcer is deep or shallow, whether its edges are smooth or eroded, etc. When the amount of secretion from the mucous membrane is increased, the director can, by having the prover go into the open air and then return to a

closed room, find the modality. Often the effect of this change in the air will determine the exact point of the mucous membrane which is irritated—*e.g.*, the fact that the supra-orbital pains of hydrastis are greatly relieved by the free flow of mucus from the nostril while the patient is in the open air and aggravated by his return to a close, warm room indicates that the increased secretion came from the frontal sinuses. A knowledge of chemistry and the microscope enables the director to determine whether the variations in the urine indicate a physiological or pathological condition. Thus when we were proving *chionanthus* we found bile and sugar in the urine, and were able to note the effect of diet upon the latter condition. We also found that this drug produced a yellow sclera, a yellowish-white coating of the tongue, *to.*, symptoms of a condition which we called catarrhal hepatitis. How did I know that the liver was involved? How did I recognize the condition? By precisely the same process that I know that another group was the result of perverted circulation caused by belladonna, *viz.* watching the effect of the action of belladonna again and again till it was fixed in my mind. So by watching the effect of something upon the liver we have the result fixed upon our mind. The cause in one case, something found in that plant which we call belladonna (beautiful lady), a name given because of its effect, primarily, on the eyes and then on the woman; in the other case, the cause, something pertaining to a disease which, from the result, we call catarrhal hepatitis. Let me use another illustration. A young woman came to her physician for sharp, shooting, burning pains along the course of the fifth nerve, relieved by heat. He gave her arsenicum. A few weeks later she returned and reported that the former pains were no better and that in addition she was thirsty but that she vomited almost everything taken into the stomach. There was burning pain in and tenderness of the stomach. She was weak and restless. The potency of the arsenicum was changed but gave no relief. The next symptom was a bloated face. Then an examination of the blood showed anæmia. The feet began to swell and the urine contained albumin and tube casts all the

symptoms of chronic nephritis. Several remedies were tried, but to no avail. The young woman died. The post-mortem showed that nearly every tissue and organ in the body were changed from the normal, fatty degeneration of the liver and kidney being marked. This young lady left a written statement to the effect that she had begun taking arsenic for its cosmetic effect and had become addicted to its use and had died from its effects. You readily perceive from this case, this proving, that arsenicum produced symptoms for every one of the four classes.

Here our knowledge of anatomy, physiology, pathology, etc., enables us to know the tissue affected and how affected by arsenicum. No one should be a director of drug proving who has not a good knowledge of the above subjects, for only thus can he be able to observe, arrange and classify the symptoms of drugs so that they may be successfully used in practice.

#### TEACHING.

How will this knowledge and classification help the teacher of drug therapeutics? Can a medical student be made to grasp the "elective affinity" of drugs? Can he be taught the cause of a sensation? Can he understand modalities? Can he comprehend the significance of a symptom in all its bearing? In the great majority of cases I answer: Yes, most decidedly, yes.

Our best students have been coming to us, materia medica teachers, well grounded in histology, anatomy, physiology and chemistry. They have been taught in these sciences that certain cells have the power to attract or repel certain other cells; that the different functions of the different tissues of the body depend upon this power of the individual cell; the perfect functioning of these tissues (health) depends upon this power of cells, and, further, that any deviation from this perfect functioning (disease) is also due to this power. More than that, these students know that the action of these different cells when located in different organs or in different parts of the same organ have different functions, each performing a special work. They have been taught that these different cells located in different parts of the human body, when in their normal condition, all work together

with one common purpose ever before them, viz., to secure perfect health. Let the teacher refresh the memory of these students by an illustration with which they are perfectly familiar—e.g., the fact that the lining of the blood vessels of the kidney is made up of cells; that some of these cells are picking out the particles of urea from the blood and sending them out of the system in the urine; that these same cells will not touch serum-albumin, because they know that it is needed elsewhere to build up and repair the body, but will treat egg-albumin as they do the particles of urea. Impress upon the student the fact that what is true of the kidney is true of any and every organ. This will teach them that every cell has its own location as well as its own power of attraction. Then teach them that if, owing to this power of attraction and repulsion, the ions or atoms of the cell are disturbed, the cells of the kidney cannot pick out the particles of urea. Again, show them that in the blood which goes to every part of the body may be carried cells, atoms, ions which may come in contact with any disabled cells, and by adding to them may supply their deficiency or by taking from them remove the excess which caused the disturbance. Having done this, your student is prepared to be informed that in the properly prepared remedy is found the cell, atom or ion which, being carried in the blood to the diseased cell, will restore its normal condition. The student will by this time be prepared to believe that the cell of a remedy being introduced into the system may come in contact with a properly functioning cell of the body and interfere with the function of that cell. Tell them that the cells, atoms or ions found in glonoine will interfere with the function of the cells which preside over the blood supply of the brain. After your statement, pass out a few discs saturated with glonoine to each member of the class and have him take them. I am sure that this will convince your students that there is something in the elective affinity of drugs. After a few minutes, when the action of the glonoine is at its height, let your student take a position with the head lower than the body and I am equally sure that he will understand what the modality "worse from having the head low" means.

Having thus introduced your student to the study of materia medica, take up the polychrests one by one and have him learn the tissues and organs upon which they act and what the action upon those tissues or organs is—i.e., whether an irritation, an inflammation, a functional change or a structural change. This, together with the characteristics and modalities, should be taught during the first two of the four years. This presupposes a fair knowledge of biology and physiology. In the college in which the first-year students do not possess this knowledge, have them taught the characteristics and modalities, leaving the elective affinity for the second year. This will lead you to a classification of your remedies. The third and fourth years should be spent in a study of the groupings and comparisons of the symptoms of these different classes.

#### THE USE OF DRUGS.

How to use the knowledge one has acquired by the study of symptoms of disease and the proving and by study of drugs is the climax of the whole subject. The ability to so arrange all the symptoms of an individual case of disease that they will crystallize into a perfect whole, making a picture so clear, so distinct as to be easily recognized, and then to have the symptoms of each remedy so fixed in our mind that we can readily find the exact counterpart of the disease picture, is what will assure the success of the homoeopathic physician. It is no easy task to learn that the value of a symptom, for *diagnostic* purposes, may differ greatly from the value of that same symptom, for *therapeutic* purposes. We know that an eruption, a strawberry tongue and vomiting are pathognomonic of scarlet fever. We also know that an eruption, a strawberry tongue and vomiting were produced by belladonna. But to make the group *characteristic* of belladonna the eruption must be smooth, and the three symptoms of the group must so fit in with the common, less important symptoms of belladonna as to make the picture that of belladonna. The three symptoms, eruption, strawberry tongue and vomiting, are sufficient for our diagnosis. They are also sufficient to call to mind not only belladonna but ailanthus, bryonia, ammonium

carb, and others of the class of drugs used as remedies for scarlet fever; but the smooth rash of belladonna, the rough irregular rash of bryonia, the meningitis of ailanthus and the blood changes of ammonium carb, are necessary to the selection of the indicated remedy for "each individual case" of this disease.

What is true of scarlet fever is equally true of measles, diphtheria and other diseases. The symptom which enables us to make our diagnosis will simply lead us to the class of remedies to be used. The essential part, the hard part of our task, is to select the one from this class which is the most similar or the exact similitum to the disease picture.

Hahnemann tells us in that other remarkable paragraph of his *Organon*, 153, that the peculiar, striking, uncommon symptom should be given highest rank. This at once raises the question: What is the standard? We must know what is common in order to recognize the uncommon, the peculiar. We answer that there is such a standard and, further, that it can be recognized only by such a division and study of symptoms as we have outlined. We have stated that in the ordinary, common case of scarlet fever we have three symptoms always present, yet we have seen cases in which only two of these three were present. Either one of the three may be absent. You say: a case of scarlet fever without the eruption! Very unusual, I admit, but I have seen three such cases. In one the certainty of exposure and usual prodroma, a very dry, red-glazed mucous membrane of the throat, typical tongue and high temperature were present. So far all is belladonna. But, no rash! That certainly is not belladonna. In addition to the three symptoms given above there were in this case scanty urine loaded with albumin and intense thirst. Later, in the case, there was desquamation of the mucous membrane but not of the skin. Merc. cor. was the remedy. Again you have a case of throbbing headache relieved by having the head low, chilliness aggravated by covering, cough aggravated, coughing, sore throat ameliorated by swallowing food, aggravated, from empty swallowing, every modality contrary to what we would expect. This is the peculiarity of ignatia. These "striking,"



"singular," "uncommon," "peculiar" symptoms of diseases and remedies we use, in connection with the common ordinary manifestation, to put the finishing touches to our picture, which touches will make it unique, not to be mistaken for any other. We all have taken cases of forty symptoms, thirty of which were found only under *nux vomica* and ten found under *lycopodium*, only, and given *lycopodium* because the ten constituted the "totality."

But, you ask, is there no rule, no method by which one can utilize all this knowledge for rapid and accurate prescribing; no mathematical formula which one can apply to all cases? My friends, Hahnemann did not say "observed in all cases," but "observed in *each individual case*." There are, however, some methods employed which, though not absolutely accurate, are helpful and to a certain degree reliable. They are: the key-note method, the intuitive method and the repertory. All have their imperfections.

The key-note method I consider unreliable, unscientific and unsatisfactory. It is unreliable because superficial, usually basing the prescription on a single symptom, making it the totality. No drug has yet produced a symptom which cannot be found in the proving of at least one other drug. It is unscientific because it does not analyze, compare or individualize. It is unsatisfactory because it often fails to secure the desired results. Let me cite a case to the point: A woman came to her physician with the statement: "I have a pain under my right shoulder blade. It begins near the spine, runs around under the shoulder blade to my side. It is a constant, aching pain. She was given *chelonium 3x* and ordered to report next day. The report was: Pain same place, same kind, only more severe. Changed prescription from *3x* to *1x* and advised chloroform and sweet oil applied locally. When the husband was going to make the application, at night, he discovered an eruption and called the doctor, who found a clear case of herpes zoster requiring *ranunculus bulb*.

*The intuition method*, I must confess, is attractive, alluring; but it is treacherous and disappointing to all except expert. It is claimed that something about the eye, the tongue, the speech, the walk, suggests the totality of the symptoms and guides to the indicated remedy. The ptosis, the pulling at the collar, the triangular tip of the tongue suggests gelsemium, lachesis or rhus tox. It is the key-note system in which only objective symptoms are used. The advocates of this method claim that Lippe, Hering and T. F. Allen used it successfully; that it was because they used it that they were able, to treat so many patients, daily. But these same advocates forget to state that Lippe, Hering and Allen did not employ this method in their younger days or that they were unusually keen observers and hard students. We older men can understand how it is possible, after having made a careful study of sepia and having prescribed it hundreds of times to see the indications for it without asking a question or hearing a statement from the patient. But even after long experience we are sometimes most woefully deceived by this method.

*The Repertory Method.*—This is much more reliable and satisfactory than the other two. The great objection to it is the time it consumes, and yet with a repertory which shows the rank of the symptoms one can study a good many cases in a day. My repertories are constantly on my desk, and their use secures for me my best results.

There is one other method for studying and using symptoms to which I wish to call your attention, and that very briefly. It is the method of grouping symptoms. Let us take arsenicum for illustration. By grouping its symptoms according to the different tissues affected and the action upon those tissues and organs is the only way that we can harmonize some of the apparently contradictory symptoms of that drug, such as "scanty urine," and "profuse urine," "puffed, red face" and "pale, sunken face," "better from heat" and "better from cold, fresh air." I learned from two acute, fatal arsenicum cases that the stool need not always be dark colored, as stated in our books, and put that

knowledge to practical use in the most severe cases of ptomaine poisoning I ever attended. This grouping naturally comes along the line of the "elective affinity" of drugs. It informs us not only as to what tissues are affected, but in what manner and to what extent they are affected, and, furthermore, will explain most of our sensations and many of our modalities.

By combining the grouping and repertory methods I believe we can most satisfactorily and safely find the symptoms of the remedy used to "retune" the abnormal functioning of tissue or organ. To those who object that this takes too much time and labor, I simply reply with Hahnemann's words: "When we have to do with an art whose end is the saving of human life any neglect to make ourselves thorough masters of it becomes a crime."—*The Journal of the American Institute of Homoeopathy*, June, 1910.

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## EDITOR'S NOTES.

**University of Toulouse on fire.**

We regret to state that some of the buildings of the University of Toulouse have been burnt down. Especially deplorable is the destruction of the library, among the contents of which were richly illuminated mediæval manuscripts, some unique anatomical plates, and a number of medical works which it will be impossible to replace. The library contained 60,000 volumes, besides collections of these, prints, etc. Fortunately some of the archives and the registers of students have been saved. The library was insured for £20,000. The buildings had cost £36,000.—*The British Medical Journal*, November 26, 1910.

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**Effects of Alcohol.**

The Monthly Cyclopaedia and Medical Bulletin in a recent editorial upon alcohol and its effects says :

"It has been concluded by Dr. Hall in the laboratory researches of the last three years that alcohol is a waste-product of tissue metabolism, producing a toxic effect on living substance. In common with other toxic substances it is oxidized in the body, which oxidation is a means of defence, as the products are far less injurious than the alcohol. Because of this defensive oxidation of alcohol, which takes place largely in the liver, the ingestion of more than a slight amount of that substance makes the body more liable to other toxic invasion. Alcohol cannot be considered a food. It decreases the efficiency of the muscles, glands and nervous system. It is a narcotic in its drug action and in lower animals impairs fecundity when given in minute quantities."—*The New England Medical Gazette*, November, 1910.

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**London Cows for London Nurseries.**

THE trouble of obtaining pure milk in London, especially when it is for the purpose of the feeding of infants, is so great that any attempts to improve the actual unsatisfactory state of affairs deserve notice. The fundamental difficulty in the matter is that the milk has to come from a distance, sometimes from quite a long distance, and from districts where the control exercised at the farm may be insufficient. It is apt, moreover, to deteriorate during the journey

from causes to the enumeration of which we have devoted considerable space at different times. How can these things be avoided? Obviously by having cows in London, but London has not been constructed to embrace farm-lands in her boundaries. And cows, especially during the milder months of the year, should be out in the fields. Also, the safest place to milk a cow is in the open air. But it has been demonstrated in more than one city by numerous analyses that milk obtained from the well-controlled, stall-fed cows kept in town stables is actually purer than that which has been derived from the inefficiently controlled country farms. Thus the inferior system, rigorously and properly carried out, gives better results than the superior system carelessly and improperly applied. An attempt to carry on a small dairy farm in the heart of London has consequently attracted our attention, and recently we paid a surprise visit to the establishment of Mr. E. J. Walker, a dairy-man in Sloane-street, who keeps his milch cows in stalls in Church-street, Chelsea. Mr. Walker stated that he only bought cows that have been through the tuberculin test and after their third or fourth calf, as this is considered the best milking time. The stalls in Chelsea we found clean and free from odour, while the cows were obviously in good physical health and condition. The great point is that these cows are milked from 4.30 to 6 in the morning. In ten minutes the milk is conveyed from the stable to the depot in Sloane-street, where it is filtered and placed in sealed bottles. By 7 o'clock it is at the consumer's house. But it is no easy matter to keep cows in London. Not only is the space for stables difficult to find and the rents are almost prohibitive, but the cost of food is about doubled, the same holding good for hay. In such circumstances pure milk from a town stable must be much dearer. The ordinary West-end price for milk is 4d. per quart. The charge for fresh-drawn milk from the stall-fed cow, delivered in sealed, sterilised glass bottles is 6d. per quart, though when it is a question of feeding infants the extra cost may be an economy. Does the question arise practically whether it would be good to encourage the establishment on a large scale of model cowsheds or stables for the production of nursery milk? Such stables would have a milking-room attached where the milkmaid, in a spotless overall and with specially washed hands, would milk the cow, away from stable dust, into a sterilised and cooled pail, while the fullest sanitary control could be exercised over the milk in its transit from the London cow to the London nursery. Our view is that anything like the

formation of many such establishments in London would be impossible. It may require a very long time to reform and satisfactorily control all the country farms that send milk to London, but this can be done. The establishment of stall-fed cows inside London to meet even a fraction of the nursery demand would be impossible. Here and there, however, enterprising people like Mr. Walker may succeed in providing what must be a luxury.—*The Lancet*, November 19, 1910.

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### A Note on the Toxicology of Carbon Monoxide.

As a consequence of the increase in the use for heating and illuminating purposes of mixtures of coal-gas and carburetted water-gas, the profession and public have become familiar with the toxic and often lethal effects of carbon monoxide. However, the two cases which I describe below seemed worthy of reporting on account of the circumstances which led to the formation and escape of the poisonous gas into the air of the rooms. In one the carbon monoxide was a product of imperfect combustion in a gas-stove which was unprovided with a flue, whilst in the other its escape was due to the fusion of a lead gas-pipe by a leaky electric wire.

CASE 1.—On Dec. 22nd, 1909, at 7-30 A.M., the bodies of a man and a woman, aged 35 and 30 years respectively, were found in a small office in Belfast. The room, which measured 15 feet in length, 10 feet in width, and 10 feet in height, was unprovided with a fireplace, and had tightly-fitting doors and windows, which were found closed. The man was dead when admitted to the hospital, and the woman died a week later. A post-mortem examination of the body of the man revealed the usual appearances presented by carbon monoxide poisoning, and the blood was found to be saturated to the extent of 60 per cent. with this gas.

At the inquest the jury found in both cases that death was due to carbon monoxide poisoning, resulting from imperfect combustion of the gas in a gas-stove, and recommended that the gas authorities should not supply gas-stoves unless a proper flue for carrying away the fumes was also installed. The imperfect combustion resulted from the fact that owing to the clogging of the burners the stove had "struck back." The evidence showed that the deceased had probably been 10 hours in the office. It may seem remarkable that the victims did not discover that the stove was at fault, but I find it is

no uncommon thing to see a gas-stove or grate in use in this condition, the owner being unaware that it is not burning properly.

The results of a few experiments I made with regard to the production of carbon monoxide in gas-stoves are as follows. An examination of a gas fire (i.e., a fireplace containing pieces of asbestos heated to redness by a row of Bunsen burners) showed that the amount of carbon monoxide given off into the air over the fireplace was inappreciable when the burners were properly lighted. When the burners "struck back" traces of carbon monoxide were given off. In one experiment 0.012 per cent. of carbon monoxide was found to be present in the air over the fire. When an ordinary Bunsen burner "strikes back" I find that the air escaping from the top of the burner may contain as much as 0.2 per cent. of carbon monoxide, and Haldane has shown that an atmosphere containing this amount of the gas is incapable of supporting life. The gas-stove associated with the unfortunate occurrence contained nine burners, the flames of which impinged on three perforated iron plates, and it is possible that these plates when red-hot contributed to the production of a carbon monoxide. There was an asbestos tile behind the burner, but there were no asbestos "bricks" in the stove. I have an impression that when the products of combustion have to pass through incandescent pieces of asbestos more complete oxidation of them occurs. It is interesting to note that the man was found dead near the door, as if he had made an effort to escape and that this effort had accelerated his death, whilst the woman, although lying close to the stove, was still alive. Exercise is known to accentuate the poisonous symptoms even when non-lethal doses of carbon monoxide are inhaled.

CASE 2.—This was the case of a man, about 50 years of age, who was found dead in a bedroom on Jan. 7th, 1910. Death was due to gas poisoning and the blood was saturated with carbon monoxide to the extent of 76 per cent. It appeared from the evidence that the deceased man was in the habit of going to his bedroom for a nap in the afternoon, and that on the occasion in question he had been poisoned by the escape of gas from a  $\frac{3}{8}$  inch gas-pipe which had fused owing to being in contact with a leaky electric wire. A  $\frac{1}{2}$ -inch gas-pipe and an electric wire had been properly laid parallel to each other and about a foot apart underneath the floor of the bedroom. From the side of the  $\frac{1}{2}$ -inch gas-pipe a  $\frac{3}{8}$ -inch pipe came off at right angles, and in its path crossed the electric wire. At the point of contact fusion of the gas-pipe had occurred. A leakage of electricity

had, evidently generated sufficient heat to melt the gas-pipe and ignite the gas, which had burned long enough to scorch the surrounding boards, but as the space was very confined there was insufficient air to support combustion, so that the gas flame had become extinguished, and then the gas escaped into the apartment above.

The deceased had not been exposed for longer than two and a half hours to the effects of the gas. There was a fire-place in the room and the window was partly open at the time. Knowing the area of the room and the rate of escape of the gas, &c., I made a calculation to determine whether a poisonous atmosphere would have resulted if ordinary coal-gas had been in the pipe, and came to the conclusion that in that case death would probably not have occurred.

Haldane has shown that with coal-gas it is almost impossible to produce a poisonous atmosphere in a room by simply leaving the gas turned on during the night, whereas with water-gas a poisonous atmosphere is easily produced even in very large rooms. In conjunction with Mr. Harold Totton, B.Sc., I made an analysis of the Belfast gas-supply at this time and found that it contained on an average 20 per cent. of carbon monoxide. Ordinary coal-gas contains from 6 to 8 per cent. of carbon monoxide and carburetted water-gas from 30 to 32 per cent., so that the Belfast supply contained a mixture of about equal parts of these gases.

Haldane has also shown that deaths from carbon monoxide are enormously more frequent in cities using coal-gas mixed with carburetted water-gas than in cities in which coal-gas only is consumed. From statistical data he concluded that the number of accidents referable to the use of mixed gas would appear to increase approximately as the cube of the gain in percentage of carbonic oxide. Thus if the percentage of carbonic oxide were increased from 6 to 12 the chance of being poisoned was not twice or even four times, but eight times as great as before the increase, and if the carbon monoxide became three times as abundant as heretofore the chances of being poisoned became increased no less than 27-fold. Carburetted water-gas began to be introduced into the Belfast supply in 1892. A return obtained from the coroner's office at Belfast showed the number of deaths from gas poisoning during the years 1889 to 1891 and 1907 to 1909 was as follows: 1889 *nil*, 1890 *nil*, 1891 one, 1907 two, 1908 five, and 1909 seven. Of course, there has been a great increase in population and in the use of gas since 1889, still a very large proportion of the deaths must undoubtedly be attributed to the increased amount of carbon monoxide in the



gas-supply. Only one of the above deaths was due to suicide ; all the others were occasioned by misadventure or accident.

McWeeney has shown that from the years 1880 to 1900 no death in Dublin was tabulated by the Registrar-General as having resulted from coal-gas poisoning, that the supply of carburetted water-gas mixed with coal-gas commenced at the beginning of 1900, and that during the four succeeding years there had been in Dublin 10 cases of gas poisoning resulting in 7 deaths. None of these deaths were suicides.

In America, where carburetted water-gas has been in use since 1880, the number of deaths from gas poisoning is enormous. The records of New York are instructive. From 1867 to 1880 there were 16 cases of gas poisoning ; from 1880 to 1892 the number was 202. During recent years the number has increased still further, many of them being cases of suicide ; for instance, in 1906 there were 419 deaths in New York due to gas poisoning, and of these 250 were the results of accident and 169 of suicide.

The facts which I have mentioned show how urgently such measures as the following are needed to prevent this wastage of life : 1. A limit should be put by Act of Parliament on the amount of carbon monoxide allowable in a gas-supply. The Departmental Committee recommended that the amount of carbon monoxide in the night supply should not exceed 12 per cent. 2. The inspection of gas-fittings and the prohibition of the use of gas-stove unless provided with a flue. 3. Where the gas-supply of a town contains a large proportion of carburetted water-gas the householder should cut off completely the supply of gas to his bedrooms. The resulting inconvenience would be trifling compared with the risk which is otherwise incurred.—*The Lancet*, September 17, 1910.

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## Gleanings from Contemporary Literature.

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### THE CAUSES OF DEATH FROM SHOCK BY COMMERCIAL ELECTRIC CURRENTS, AND THE TREATMENT OF THE SAME.

By E. MacD. STANTON, M.D.,

SCHENECTADY, N. Y.

and

ARTHUR KRIDA,

ALBANY MEDICAL COLLEGE.

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*(Continued from November issue.)*

#### EFFECTS OF ALTERNATING CURRENTS ON THE CENTRAL NERVOUS SYSTEM.

As before stated low tension alternating currents may kill by causing cardiac fibrillations without producing any noticeable effect upon the central nervous system; even consciousness may be but little affected, and both consciousness and respirations finally fail only as a result of the anemia of the central nervous system resulting from the stoppage of the circulation. Medium tension currents (600 volts) cause loss of consciousness and respiratory paralysis usually accompanied by cardiac fibrillations. On the other hand, currents of high tension (2,300-4,800 volts) cause instantaneous loss of consciousness with almost instantaneous respiratory paralysis, accompanied only very infrequently by cardiac fibrillations.

If the contact is prolonged with the higher tension currents the anæsthesia produced is most profound and may last for half an hour or more, and yet the patient ultimately recovers under artificial respiration, provided there has been no cardiac paralysis. One case is on record in which a man is said to have recovered after four hours of artificial respiration.

#### VARIATIONS IN EFFECTS PRODUCED DUE TO DIFFERENT POINTS OF APPLICATION OF ELECTRODES—

##### FREAK ACCIDENTS.

The markedly variable results from accidental shocks are well known to all, fatal accidents sometimes result from contacts with currents ordinarily hardly considered dangerous, and individuals at other times escape from contacts which under ordinary conditions would seem necessarily fatal.

This must, in part, be accounted for by the poor contacts often formed in accidental cases, as contrasted with the carefully planned contacts

of experimental work. Also, due to the arcing tendencies of high tension currents, portions of the body may sometimes serve only as a means of completing the arc, the current not permanently passing through the body.

In experimental work wide variations are seen in the results, depending upon the points selected for the application of the electrodes ; this must also be an important factor in explaining the effects produced by accidental contacts. When the electrodes are placed in the mouth and the rectum, the current must necessarily traverse the region of the heart, and with all strengths of current cardiac fibrillation is far more likely to occur than if the electrodes are placed, on the head and one fore-limb, or one fore-limb and one hind-limb, in which case the heart does not lie in the direct path of the current ; on the other hand, the respiratory mechanism is far more rapidly affected if the medulla oblongata lies in the direct path of the current.

#### TREATMENT OF ELECTRIC SHOCK.

With a definite understanding of the mechanism of death from electric shock, the indications for treatment become clearly outlined. The possibilities of resuscitation are inseparably connected with the factors of respiratory and cardiac failure. In the cases of simple respiratory failure resuscitation depends upon the maintenance of respiration by artificial means until such time as the anæsthetic condition of the central nervous system shall have disappeared. The cases with ventricular fibrillation are apparently utterly hopeless from the very first, unless some means be devised whereby rhythmic cardiac contractions of the heart may be promptly re-established.

Artificial respiration may be maintained either by manipulating the body itself in such a manner that the chest cavity is alternately compressed and expanded, or by the use of a pump or a bellows so manipulated as to force air at regular intervals through the trachea and into the lungs in sufficient volume to expand the chest and properly fill the lungs. Expiration is accomplished by simply releasing the pressure and allowing the chest walls to collapse. As the pressure required is not more than eight m.m. of mercury, a simple hand or foot bellows of sufficient capacity will serve perfectly as an air pump, but as the tube must be inserted into the larynx, a suitably curved metal or hard rubber cannula should be provided for this purpose, and provision must be made for the release of pressure during expiration. It is very essential that no effort be made to forcibly suck the air from the lungs, as this causes a collapse of the smaller bronchioles, which effectually seals the air in the alveoli and prevents emptying the lungs.

While artificial respiration may be maintained for some time in a fairly satisfactory manner by manual methods, it is always difficult, and except when performed by skilled operators, the exchange of air is barely sufficient to maintain life.

A properly constructed apparatus for maintaining artificial respiration is very easy to manipulate once the tube is properly inserted into the larynx, and such an apparatus with some one capable of inserting the tube into the larynx should always be on hand in testing laboratories and places where accidents are particularly likely to occur. Artificial respiration should be begun by manual methods at once and maintained until this apparatus can be brought to the patient.

A possible point in favor of maintaining artificial respiration by means of this apparatus is the fact that all manual methods require energetic manipulation of the chest wall with more or less accompanying massage of the heart, and from a study of the experimental results it seems quite possible that any traumatic impulses transmitted to a heart through which a current has just passed may tend to establish fibrillary contractions in the heart which would otherwise not occur.

In order that the blood supply to the respiratory centers may be maintained as well as possible and in order that the heart may be well supplied with blood, it would seem to be always advisable to keep the patient in the head down position, best maintained by laying him on a plank or table with the foot end elevated at an angle of 35 degrees.

Whereas cases of simple respiratory failure give fair prospects of recovery with properly maintained artificial respiration, the cases of cardiac failure are at present absolutely hopeless from the onset, and will probably remain so unless some practical means be devised for re-establishing the normal action of the heart.

Prevost and Battelli have shown that the application of a high tension current (4,800 volts) may re-establish the normal heart beats if applied at a time before the blood pressure has fallen too low, that is, within less than fifteen seconds after the time of injury. Robinovitch has secured similar results with the Leduc current, but methods requiring application within fifteen seconds are obviously impossible of execution in practical work.

Within the past few years the researches of Crile and Dolly have added enormously to our knowledge of the factors which maintain the normal cardiac rhythm. These investigators have shown that it is quite possible to re-establish normal heart action in animals killed by chloroform or asphyxia, even after the heart has been entirely stopped for periods up to five minutes or more. Crile and Dolly have shown that the limit of time of resuscitation is not determined by the heart itself but by the susceptibility of the central nervous system to injury by the anæmia resulting from the suspension of the circulation. While the heart's action may be re-established after intervals greater than five minutes, the central nervous system cannot stand an absence of blood supply for a much longer period, so that the animals recovering after this period show permanent evidence of brain injury, remaining in the more extreme cases, practically as decerebrates.

Sollman was the first to show that ventricular contractions depend upon a sufficient pressure in the coronary arteries, and that the quiescent heart may be made to beat in some fluid, even metallic mercury, be forced into the coronary arteries. Crile and Dolly finally devised a means of producing this necessary pressure in the coronary arteries with the heart in situ, using the following method: First, the arterial system is rapidly filled with salt solution by injecting the solution toward the heart through a suitable peripheral artery, and at the moment when the arteries are nearly filled a sufficient quantity of adrenalin chloride is added to the salt solution. This causes the vessel walls to contract, and thus rapidly raises the blood pressure within the arteries. At the proper moment the heart is stimulated by a few quick compressions on the chest wall, which causes it to immediately jump into action, beating very vigorously from the first beat.

The possibilities of this method may be well shown by reporting in detail the results of one of our resuscitation experiments.

Dog No. 11. Small fox terrier.

Chloroform anaesthesia.

12.40—Respirations ceased unexpectedly before the apparatus was ready for the experiment. Very slight heart action for a few seconds after respirations ceased. Laryngeal tube inserted and artificial respiration alone tried without avail, the heart action soon ceasing entirely.

12.44—Carotid artery exposed and cannula inserted toward the heart. No bleeding from artery. Artificial respiration maintained constantly.

12.46—Saline infusion into carotid artery with the bottle at a height of five feet above the table, and 1 c.c. of 1-1,000 adrenalin chloride solution injected into tube near cannula after salt solution had been flowing about ten seconds. Indirect cardiac massage by pressure on the chest wall. No response from the heart.

12.49—Salt solution, adrenalin and massage repeated.

12.49.30—Heart begins beating strongly.

12.51—Respirations begin, irregular at first, then become more regular, and animal soon begins to struggle.

12.55—Contact of ten seconds' duration, alternating current of 118 volts, 60 cycles, with electrodes on neck and abdomen.

12.56—Salt solution and adrenalin chloride solution administered as previously, with artificial respiration. Opened abdomen, examined the heart and massaged the same through the diaphragm. Fibrillary contractions of the ventricles, auricles beating. No return of normal beats. Continued to massage heart until.

1.15—Experiment abandoned.

The technic of Crile and Dolly is so simple and easy of execution as to make it practically possible to carry out the same in such a place as the Testing Department of the General Electric Company, where a trained man is always in readiness to care for such emergencies. The writers have therefore made a number of experiments to determine the

applicability of this technic as a method of resuscitation in cases of heart stoppage by electric shock.

Our results as regards resuscitation from chloroform poisoning confirm the work of Crile and Dolly, and as regards the death of dogs from low tension alternating currents, our results are in full accord with the findings of Prevost and Battelli and others; but in no instance were we able to re-establish rhythmic contractions in a dog's heart by the normal salt-adrenaline chloride technic of Crile and Dolly once fibrillary contractions had been induced.

The following is a summary of our experiments :

Dog No. 1. Large male setter. Killed by chloroform anæsthesia. Attempted Crile and Dolly technic, but with too small a cannula and salt solution bottle elevated only three feet. Result negative.

Dog No. 2. Medium-sized bull dog. Treated as dog No. 1. Results negative except that a few feeble heart beats were established by direct cardiac massage after ten minutes.

Dog No. 3. Large pointer. Treated as dog No. 1. Result negative.

Dog No. 4. Large bull dog. Previous errors in technic corrected by raising salt solution bottle to a height of five feet above the table and substituting a cannula of suitable size.

1.06—Dog killed by chloroform.

1.08—Normal saline infusion toward heart,  $\frac{1}{2}$  c.c. adrenalin chloride, artificial respiration by machine, indirect cardiac massage. Prompt recovery of heart beats, with high blood pressure, forcing bloody liquid back into solution bottle. Re-establishment of normal respirations.

This dog was again killed by re-administration of chloroform, and second attempt at resuscitation after an interval of five minutes failed.

Dog No. 5. Mongrel puppy, weight about 2.5 kilos. Chloroform anæsthesia, femoral artery exposed and prepared for insertion of cannula. Inserted laryngeal cannula. Dog almost out of the anæsthesia at the time of application of current.

5.30—Ten seconds' contact, 118 volts, 60 cycles, electrodes at side of head and abdomen.

5.30.15—Same contact repeated.

5.30.30—Same contact repeated.

No evidence of pulsation in femoral artery after first contact, but repeated spasmodic respiratory efforts led us to make repeated contacts. Prevost and Battelli noted that dogs may breathe well and retain consciousness for some time after fatal heart failure.

5.33—Saline infusion into femoral artery, with 1 c.c. adrenalin chloride artificial respiration. Indirect cardiac massage.

No result.

5.34.30—Same repeated. No result.

Opened pericardium through abdomen and diaphragm. Auricles beating, but ventricles contracted with marked fibrillation. Direct massage. No result.

The contracted fibrillating ventricles with beating auricles were in marked contrast to the distended heart found at similar periods after chloroform death.

Dog No. 6—Mongrel puppy. Weight about 10 kilos. Chloroform anaesthesia, femoral artery exposed, laryngeal tube inserted.

6.00—Ten seconds' contact, with a current of 118 volts, 60 cycles, electrodes at side of head and abdomen.

6.02—Saline infusion into femoral artery, artificial respiration by machine, adrenalin chloride, 1 c.c. Bimanual cardiac massage with one hand inserted through incision into abdomen and the other on the outside of the chest wall. No result.

6.04—Repeated infusion, adrenalin and massage.

6.07—(Approximately.) On stopping artificial respiration after a period of rather violent cardiac massage, the dog made a few gasping respirations, raising his head somewhat at the same time, and we thought that there were a few spasmodic heart beats at the same time, but accurate observations were impossible during the spasmodic contractions of the chest wall.

6.08—Exposed heart and found usual fibrillary contractions of ventricles, with beating auricles. Direct massage produced no results.

Dog No. 7. Mongrel puppy, weight about 7 kilos. Chloroform anaesthesia, femoral artery exposed, tracheal cannula inserted.

7.30—Ten seconds' contact, 118 volts, 60 cycles.

7.31.30—Saline infusion into femoral artery, allowed to flow ten seconds. Artificial respiration.

7.32—One c.c. adrenalin chloride. Cardiac massage bimanually, with one hand inserted through abdominal incision and other on chest wall.

7.34—More saline.

7.35—One c.c. adrenalin chloride. Cardiac massage continued.

7.50—No return of respiration or circulation, experiment abandoned. Heart definitely in fibrillary contraction when first palpated through the diaphragm. No evidence of circulation in femoral artery at any time.

Dog No 8. Mongrel puppy, weight about 4 kilos. Chloroform anaesthesia femoral artery exposed, tracheal cannula inserted.

11.30—Ten seconds' contact with current as previously. Cannula which had been held in the divided femoral artery by Crile clamps, slipped at moment of contact, and had to be replaced.

11.32.30—Saline infusion into artery. Artificial respiration, One c.c. adrenalin chloride. Bimanual cardiac massage.

11.38—More saline, with 1 c.c. adrenalin chloride.

11.55—No return of circulation or respiration. Fibrillary tremulation from moment of contact. No hemorrhage when clamps slipped. Absolutely no effect from salt solution and adrenalin. Violent massage just before abandonment of experiment forced blood high into solution tube by the action of the massage alone.

Dog No. 9. Small mongrel dog, weight about 7 kilos. Chloroform anæsthesia, femoral artery exposed, tracheal cannula inserted.

11.00—Ten seconds' contact, current as in previous experiments.

11.02—Normal salt infusion into femoral artery. One c.c. adrenalin chloride. Artificial respiration, bimanual cardiac massage through incision below diaphragm.

11.05—A slight flutter may be elicited from the heart after prolonged massage through the diaphragm, but no decided heart beat. Dog gave a few deep gasps at this time, raising his head at each gasp. These subsided in a short time and experiment was abandoned.

Autopsy shows lungs to be in good condition; the heart is contracted and practically empty.

Dog No. 10. Small fox terrier. Chloroform anæsthesia, carotid artery exposed and cannula inserted into proximal end. Tracheal cannula inserted.

11.45—Began chloroform, pushed same until heart ceased beating. Respirations cease.

11.50—Heart has ceased beating.

11.53—Normal saline infusion into carotid artery, about 75 c.c., 1 c.c. adrenalin chloride. Artificial respiration and bimanual cardiac massage through incision below diaphragm.

11.55—Heart begins to beat forcibly and rhythmically.

11.58—Spontaneous respirations begin.

12.05—Ten seconds' contact, with current as in previous experiments.

12.07—Saline infusion, with procedure as above.

12.20—No return of pulse or respiration.

Dog No. 11. Reported in detail above, see page—529.

Dog No. 12. Large mastiff. Chloroform anæsthesia changed. Carotid artery exposed, cannula inserted.

11.30—Heart and respiration suddenly and unexpectedly cease.

11.35—Saline infusion, 1 c.c. adrenalin chloride. Artificial respiration.

11.40—More saline, with adrenalin. Bimanual cardiac massage. No return of heart beat, found to be due to over distension of heart with the saline infusion.

#### IN CONCLUSION IT MAY BE SAID :

*First.*—That there are many questions concerning this subject which remain as yet unsolved.

*Second.*—The two great causes of death are cardiac fibrillation and respiratory paralysis.

*Third.*—Low tension currents tend to kill chiefly by producing cardiac fibrillation.

*Fourth.*—As the tension is increased the effect upon the heart becomes less pronounced but at the same time the effect upon the central nervous system becomes more and more certain as the tension is increased so



that the high tension currents, death is more likely to be caused by respiratory failure although if the contact is prolonged the heart is also stopped.

*Fifth.*—We have been unable to find any reliable data concerning the action of commercial currents of more than 4,500 volts but all evidence points to the central nervous system as being the chief sufferer from the effects of currents of more than 4,800 volts.

*Sixth.*—Cardiac fibrillation is fatal under known method of treatment.

*Seventh.*—In cases of simple respiratory paralysis the patient may be kept alive by artificial respiration until the nervous system recovers from the effects of the shock.

*Eighth.*—Further investigations should be conducted to see if the method of Crile and Dolly may not be combined with the high tension contacts of Battelli or those of Leduc and Robinovitch whereby resuscitation might be brought about in cases of cardiac paralysis during periods of up to five minutes following the accident.—*New York State Journal of Medicine*, September, 1910.

## DISCUSSION ON FOOD REQUIREMENTS FOR SUSTENANCE AND WORK.

By Lieutenant-Colonel MELVILLE, R.A.M.C.

In opening the discussion on the question of "Food Requirements for Sustenance and Work," I propose to take an actual concrete instance of men doing a measured amount of work on a measured amount of food, in which the effect of these two factors on the weight, general condition, and well-being of the individuals experimented on was carefully recorded.

As regards the men who formed the subject of the experiment, these were twenty infantry soldiers of ages between 18 and 38. No special selection as to habits or physique was made, a general examination to exclude any actually unsound man only being carried out. There was also a considerable range of physique, the heaviest man being, at starting, 76.6 kilos (12 st.), and the lightest 55.30 kilos (3 st. 9 lb.). The average weight of the party was 64.15 kilos (10 st.). The work done was a daily march averaging between twelve and thirteen miles, carrying a load of 24.55 kilos (54 lb.). This march was executed for six days continuously, then one day's rest intervened before the completion of the experiment by five more days' marching. The external work thus performed was calculated on a formula adapted from Zuntz's work as follows: For every kilo of body weight transported 1 metre horizontally at the rate of

94 metres to the minute (the actual rate practised) 0.0006 calories were expended. For every kilo raised through 1 metre vertical 0.0075 calories were expended. The distances marched and the vertical distances ascended were carefully measured on a 6-in. ordnance map. The horizontal and vertical works were multiplied separately by the average weight of the loaded man, and the sum of these taken to represent the day's work on the march. The average daily amount of energy thus expended came (after various corrections, on account of individual men who fell out, or who remained in camp on certain days) to 1.034 calories,—that is, roughly, 90 calories per mile of ordinary give-and-take road. It may be noted that this figure has been found to be fairly constant for the South of England, where long or steep hills are the exception, for a man of the average weight, and carrying the average load mentioned. To this a certain amount had to be added to account for internal work and for external work during non-marching hours. This was assumed at 3,000 calories. The grounds for this assumption may be briefly stated. Zuntz gives the expenditure of a man at absolute rest as 1,700 calories, which is increased by 30 to 50 per cent. if a purely sedentary life—confined to one room, reading and writing—be led. This gives us a figure of 2,200 to 2,250 calories. The men of the experiment during the ten non-marching, waking hours (allowing ten for sleep and four for marching) led a distinctly active life. There was, of course, the ordinary work of camp life to be done (on one occasion the camp had to be struck and moved by hand a quarter of a mile to a less exposed site), and a good deal of football and quoits were played. If we estimate this as equivalent to one mile for each working hour in excess of sedentary life, this will give us 800 calories—that is, 3,000, taking the lowest sedentary figure arrived at by Zuntz. I note, since the above was first written, that the same observer places the energy expended by the infantry soldier on a day of rest at the same figure, of 3,000 calories. The total work, internal and external, per diem amounted, therefore, to 4,034 calories.

The food supplied varied somewhat during the first and second periods of the experiment. It consisted essentially of bread, meat, potatoes, jam, and sugar, with tea, pepper and salt, etc. During the first six days tinned meat and biscuit were issued; during the remainder of the period fresh meat and bread. The ultimate constituent principles were as follows: During the first week, proteins, 190 grams; carbohydrates, 510 grams; and fats, 58 grams. During the remainder of the time: proteins, 145 gram; carbohydrates, 450 grams; and fats, 110 grams. The total energy value averaged on the first week 3,426 calories, and on the second 3,503 calories. The averages over the whole period were as follows: Proteins, 168 grams; carbohydrates, 480 grams; and fats, 84 grams. The average gross daily energy supplied was 3,481 calories. From this 10 per cent. should be deducted for unavoidable waste, giving net, say, 3,140 calories.

(It must be noted here that in the above calculation the energy value of

a certain amount of alcohol has been included;  $2\frac{1}{2}$  oz. of whisky on one occasion, and of rum on another, were issued, owing to weather conditions and extra fatigue).

Comparing the amount of energy supplied by the food with that expended in work, taking the average per man per day in each case, we find that the former fell short of the latter by about 890 calories.

We now come to the combined effect of the work and food on the men. There was a general and steady rise in weight over the first three days of the experiment, averaging 0.55 kilos, followed by a period of two days during which the weight remained stationary. After this, with the exception of a slight rise the day after the day of rest, the weight fell steadily till the end of the experiment. The average fall was 2.22 kilo for the maximum, and 1 kilo over the whole period. These same features of an initial rise, followed by a subsequent fall, were observed in the case of the officers accompanying the party. These were restricted in food in the same way as the men, but carried slightly less weight; being all older men, and chiefly heavier than the main party, their figures have not been included with the rest, but are useful for purposes of comparison. This initial rise is of considerable interest. It could not be due to an increase in stored fat, since in the earlier days this constituent was markedly lacking in the diet. The most probable explanation is that it was due to retention of water in the tissue. There seems some evidence to prove that a greater amount of fluid was consumed, by some of the party at least, in the earlier days, when corned meat was eaten, than they had been in the habit of drinking prior to the march. This was not universally the case, however, and it is doubtful whether the increased ingestion due to thirst produced by salt meat would not be more than balanced by an increased diuresis produced by the action of the potassium nitrate to which the thirst was attributable. In any case this explanation does not seem sufficient to account for the steady rise that continued for three days, and whose effects persisted till the end of the first phase of the experiment. It is to be noted that the amount of protein ingested per day during the first six days was 190 grams, a distinctly high figure, amounting to a rise of probably 30 per cent. on the amount ordinarily consumed in barracks. At the same time the carbohydrate allowance was increased by about 25 per cent. A storage of protein in the body does not therefore appear improbable, in view of the stimulus to muscle growth afforded by the regular work demanded of the men during marching. Human muscle consisting of about 20 per cent. protein and 80 per cent. water, if we assume that the excess of protein above the customary barrack allowance was retained, this being say 50 grams, the total increase in weight obtained in this manner would if continued over the first three days amount to 750 grams. Since the actual increase averaged 650 grams, this would allow for a certain excess expenditure of fat and glycogen in the production of energy. It must be noted, too, that during the first six days of the experiment there was a distinct

increase in calf circumference of, on an average, 0.22 of an inch. The average abdominal girth also increased by 0.54 of an inch, possibly due to increase in the lumbar muscles. Whatever the explanation this point of the initial increase in weight seems a suggestive one for discussion and future investigation. During the last days of the experiment the reduction in weight was marked and continuous. During the last five days the average loss was 234 grams per diem, or just over half a pound. This loss must have been either in fat or flesh, or partly in one and partly in the other. If in fat alone the daily loss of energy would have been  $234 \times 9.3 = 2,176$  calories, whereas the estimated daily loss was, over these particular days, under 890 calories. It must also be remembered that during the earlier part of the experiment the ration of fat had been extremely low, only 58 grams. There was, therefore, probably very little superfluous fat available in the bodies concerned in the experiment. It must be added that already by this time there was a generally sunk appearance in the faces of the men, attributable to loss of adipose tissue. If we refer to an experiment lately recorded by Benedict, and quoted by Zuntz, we find that in a seven days' starvation experiment the daily loss of weight was 526 grams, this being represented by a loss of 69.5 grams protein, 139.6 grams fat, and 23 grams glycogen. The protein loss corresponded to a loss of 347 grams of flesh. The total loss of energy (measured by the calorimeter) was 1,690 calories. These figures give a loss of energy of 1,298 calories from destruction of fat, 285 calories from protein, and 94 calories from glycogen. Thus whilst the greater part of the lacking energy was found from fat, a correspondingly high percentage of the loss of weight was due to waste of fleshy tissues. If we assume that the loss of weight of the men under observation was similarly distributed, we shall find that they should have lost in energy  $\frac{234}{526} \times 1,690$ , that is 756 calories, whereas, as a matter of fact, the calculated deficiency of food as compared with work done was, as already stated, less than 890.

The agreement is fairly close, and we shall probably be justified in concluding that the daily loss of weight was represented by a loss of about 60 grams of fat and 170 grams of flesh. The officers were, as a whole, losing weight about half as fast again as the men, but as already noted they were on the average heavier individuals. The heaviest man in the party lost more rapidly even than the officers. The measurements taken at the end of the experiment showed a distinct wastage. This was most marked in the chest, which fell on the average 0.56 in. in the first week, 0.42 in. in the second week, and 0.98 in. in the whole period. There can be little doubt that this was attributable to wastage of pectoral muscle. In the second week the abdominal girth fell over 1 in. whilst the circumference of the calf fell 0.16 in. Too much reliance cannot be placed on these figures as showing actual quantity of loss, but they have a distinct value as demonstrating the fact that loss occurred, especially when taken together with the loss of weight.

Turning now to the question of the different constituents of the diet. In the first six days the average amount of protein consumed was, as already stated, 190 grams, of which 100 grams was furnished in the form of corned beef, and 75 grams in biscuit. I have no doubt in my own mind that this allowance is ample, and if it errs does so on the side of generosity. A substitution of a certain amount of fat for some of the protein would undoubtedly have been an advantage. In the second week the average amount of protein was 145 grams, supplied in the form of fresh meat and bread. I have no hesitation in saying that this allowance is as low as it is advisable to go, and might well be increased, especially when hard work is demanded of men under conditions of exposure. This is, I am aware, in contradiction to the theory held by many at the present day. I would, however, submit that experiments carried out on men leading sheltered lives, with regular meals, and rest, are no safe guide when we are dealing with the food of men exposed to even the slight hardship of camp life in bad weather (I may remark that throughout the experiment in question the weather was atrocious, and, speaking for myself, I never slept in dry bedding or put on dry underclothing after the first day,) and much less so when we are dealing with the inevitable vicissitudes of active service. I need hardly remind you of the fact that the Japanese have been compelled to increase their protein ration in the navy to 150 grams, and have found marked benefit to result therefrom. As to any possible harm resulting from a high protein diet, speaking here of men leading active animal lives, I must confess I have failed yet to see any positive proof of the fact. I think we are too apt to rely upon isolated experiments as against prolonged experience. The British inhabitants of these inland have for many hundred years been large meat eaters. Taking the labouring class, certainly we may say that the only check to meat eating has been poverty. When the Englishman can afford meat he will have it; I think I am safe in saying that the enormous majority of my audience, as indeed of any other assembly in the country, are descended from a large protein eating stock, and, when they are able to afford it, a meat eating stock, and I confess I fail to see any marked signs of that degeneracy which, if all the evil tales we hear were true, should be written at large on the bodies and faces of my audience.

Far more important to my mind than the actual quantity of protein is its nature, that is to say, the foodstuffs in which it is furnished. Variety here is the great essential. This is the difficulty that confronts all men who have to lay down a scale of diet under conditions which demand the resort to preserved foods especially preserved meats. No matter how excellent the quality, a very short experience of the same kind of food rapidly produces an intense distaste for it. The use of milk proteins in the form of cheese, or of the vegetable proteins in the form of the leguminous plants, is, in my opinion, one of the most satisfactory aids to the solution of the problem.

As regards carbohydrates, the average allowance during the first week was 510 grams, during the second 450, with an average of 480. These were supplied in the form of bread or biscuit and potatoes as regards the starchy foods, and in the form of sugar and jam as regards the other division, sugars. As to the absolute amount of carbohydrates to be given, there is of course no regular rule to be laid down. Very much depends on the habits of the nation to which the individual belongs. In our army 1 lb. of biscuit or  $1\frac{1}{2}$  to  $1\frac{1}{2}$  lb. of bread are traditional, and date back to the eighteenth century wars if no earlier. The Germans give  $1\frac{1}{2}$  to  $2\frac{1}{2}$  lb.; the Russians as much as  $2\frac{1}{2}$  lb. The form in which the carbohydrate is given is of great importance. Certain classes cannot digest a large amount of starchy food, and it was found in this experiment that the officers did not consume more than three-quarters of their biscuit ration, owing to the difficulty of mastication and conversion of the starch. The bread ration was consumed completely, but this was due to the ease with which bread can be swallowed without thorough mastication. There was a distinct craving for more bread, occasionally for more biscuit. The latter was rare, however, largely because biscuit takes much longer to eat, and is therefore not consumed all at once. As regards the officers, the demand for carbohydrates was evidenced by a craving for sugar, which lasted for a week after a return to normal diet.

As regards fats, it will be noticed that the average amount given in the first week was only 59 grams, and if we exclude the first day when a special cheese sandwich was issued under 50 grams. This is of course low, and the ratio of fat to carbohydrate during that period was as 1 to 10—a proportion noted in the diets of the poorer classes only. The effect of this low fat ration was distinct in the sinking of the cheeks and hollowing of the eyes of individuals. In one or two of the men and in all the officers this was very apparent, even during the period when weights were going up. In the second part of the march the fat ration averaged 110 grams, bearing a proportion of 1 to  $4\frac{1}{2}$  as regards the carbohydrates. This is a high ratio under ordinary circumstances, though not higher than that which the soldier is accustomed to in barracks. The lack of fat during the first week was severely felt, as was shown by the avidity with which it was eaten during the second week. Even the high allowance of this last period was insufficient, at least as regards the officers. The craving for additional fat continued in their case for at least a week after the experiment was concluded. Foreign armies all give poor fat rations, the Russians as low as 27 grams, Germans 68 ordinarily and 100 on the special war ration, French 72 on the augmented service ration. The United States alone give over 100. The lack of fat is a serious matter when preserved meat is issued. The proportion of fat to meat in fresh meat (beef sides, medium fat, as purchased, at water) is about 1 to 4, but in corned beef this is reduced to 1 to 10, and indeed any figure

much above this, makes the meat unpleasantly greasy. In my opinion, speaking I admit a good deal from experiment *in corpore vili proprio*, a ration of 150 grams of fat would not be found too much if hard work is to be done. A good form of fat ration is cheese, which at the same time helps to do away with the monotony of the protein ration, but lard or suet would also be very suitable forms of supply, since they would assist in the cooking of the other parts of the ration. I should like to elicit from the meeting a pronouncement on the question as to which is the most suitable form of food where a large amount of energy is required, and where portability also has to be considered. Proteins I do not think can be placed higher than the allowance given in the first week of the experiment—that is, 190 grams. Portability demands the use of preserved food, and a larger supply of protein in that form means distaste for the diet, which is wasted in consequence. The choice lies between fats and sugars, or a combination of the two. The Japanese in Manchuria in cold weather relied on large issues of raw sugar, with which the men filled their pockets. The energy value attained in this manner was, I believe, somewhere in the neighbourhood of 8,000 calories or even higher—a figure demanded by the extraordinary cold to which the men were exposed. Sugar has the great advantage that it can be consumed and appreciated raw. Personally I found during the experiment that a mixture of sugar and jam in approximately equal parts formed an excellent and most sustaining diet. Fat is less portable, especially in a hot climate, and cannot of course be eaten by itself or without cooking to any great extent. The problem, as I should put it, is as follows: The energy demanded being 5,000 calories—say, for instance, a forced march of twenty-five miles under severe weather conditions—of which 800 calories is furnished by protein and 1,800 by starchy food (biscuits, as was the case in the earlier part of the experiment,) in what form should the remaining 14,000 calories be furnished, by fat or sugar? or, if, as is more reasonable, a combination is used, what proportion should the one bear to the other? The *British Medical Journal*, October 29, 1910.

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